ASSESSING ACCESS AND USE OF PERII ELECTRONIC RESOURCES AT THE UNIVERSITY OF DAR ES SALAAM: THE CASE OF POSTGRADUATE STUDENTS IN THE SCHOOL OF EDUCATION

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DECLARATION

I declare that this dissertation is the original work of the researcher and that it has not been submitted and will not be submitted to any other university for a similar or any other degree award. Works of others used in this dissertation have been duly acknowledged in the text and included in the reference list.

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ABSTRACT

This study aimed at assessing access and use of PERii electronic journal resources by postgraduate students in the School of Education at the University of Dar es Salaam. Specific objectives for this study were to examine if the postgraduate students in the School of Eduction are aware of PERii electronic journal resources; to examine if the postgraduate students access PERii electronic journal resources; to examine if the postgraduate students use PERii electronic journal resources; to examine the challenges encountered by postgraduate students in the access and use of PERii electronic journal resources; and to determine possible ways to improve access and use of PERii electronic journal resources. The study was basically a cross-sectional study and data were collected through a combination of questionnaire for postgraduate students and interview for the Reference Librarians. The findings of this study were that the majority of postgraduate are aware of PERii electronic journal resources through various sources including the Library website, notice board, fliers, posters, IL training, colleagues, librarians and supervisors. Again, the majority of them use PERii electronic journal resources for various purposes including working on the assignments, research proposal writing, literature review, research report writing, current awareness, leisure, and for extra exploration of ongoing scientific debates through peer reviewed papers. The challenges encountered include power outage, inadequate bandwidth, slow download speed, inability to access the resources from home, lack of training, lack of awareness, limited access to computers and difficult in making a search. Suggested ways to improve access and use of PERii electronic journal resources include seeking to provide training on how to access and use of PERii electronic journal resources; ensure stable and reliable power, ensure adequate bandwidth; increase awareness of the resources, improve ICT infrastructure, enable access of the resources from home; increase download speed and ensure relevant information is provided. Based on these findings it was recommended that training on access and use of PERii electronic journal resources should be integrated into the University curriculum; ICT infrastructure to support access and use of PERii electronic journal resources should be improved; ensuring stable and reliable power by buying heavy duty generators at the University; increasing awareness by improving methods for promotion and marketing of the resources; enabling access of PERii electronic journal resources from home; ensuring adequate bandwidth through shaping the available bandwidth allowing certain services such as ICT services to receive a large proportion of bandwidth than other services; and ensuring relevant information is provided through subscribing more database with relevant information to all courses at the University.

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List of Abbreviations

AGORA	Access to Global Online Research in Agriculture
AJOL	African Journals Online
ASABE	American Society of Agricultural and Biological Engineers
COTUL	Consortium of Tanzania Universities and Research Libraries
CUUL	Consortium of the Uganda University Libraries
EIFL	Electronic Information for Libraries
FAO	Food and Agriculture Organization
HINARI	Health InterNetwork Access to Research Initiative
ICT	Information and Communication Technology
IL	Information Literacy
INASP	International Network for Availability of Scientific Publications
JASA	Journal of the Acoustical Society of America
LAN	Local Area Network
MALICO	Malawi Library and Information Consortium
NAADS	National Agricultural Advisory Services
NICTBB	National Information and Communication Technology Broadband Backbone
OARE	Online Access to Research on the Environment
PCs	Personal Computers
PERii	Programme for Enhancement of Research Information
SPSS	Statistical Package for Social Sciences
SRKS	Strengthening Research and Knowledge Systems
TEEL	The Essential Electronic Agriculture Library
UCC	University Computing Centre
UDSM	University of Dar es Salaam
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1 General Introduction

The development of the Information and Communication Technologies (ICT) has changed the way information is generated, stored and accessed whereas internet and web-based technologies have facilitated publishing and distribution of information resources in digital format (Ahmed, 2013b:290). Rosenberg (2008:ix) adds that "the move from a physical to a virtual product has created new ways to create, store, access, use and manage content as well as new challenges on how to understand and learn from those processes". The availability of ICT has made possible the access and use of e-resources. People in many academic institutions no longer depend on printed materials only; instead they also use the e-resources to meet their information needs.

Electronic resources have become vital resources and a source of information in academic areas whereby students, researchers, and faculty members use them to complement or supplement printed books. There are different types of electronic resources which include electronic books (e-books), electronic journals (e-journals) and other electronic resources.

Electronic resources have a lot of advantages including flexibility in searching; they can be accessed at anytime, anywhere including at home, in dormitory, office or anywhere else; they allow searching text easily and have high speed of access while allowing access to a wide range of information; they allow animation of graphics; they can be downloaded, stored, and printed; they allow cut and paste, move, add, delete as much as desired (Adesoye & Amusa, 2013). According to Adesoye and Amusa (2013), information in digital format allows data manipulation; it allows searching and access and it can be linked to indexing and abstracting services.

1.2 Background of the Study:

1.2.1 INASP and PERii programme

The International Network for the Availability of Scientific Publications (INASP) is a non-governmental organization based in Oxford, UK. INASP has been running the Programme for Enhancement of Research Information (PERI), a ten years programme from 2002 to 2013 (INASP-PERI, 2013). PERI programme was "developed over an 18-month period between

1999 and 2000 in consultation with research partners from many countries" and its main concern was to help in strengthening research capacity in developing and emerging countries by delivering research and scholarly information, disseminating national research, enhancing ICT skills, and strengthening local publishing (Rosenberg, 2008:xiii). According to Rosenberg (2008: xiii, xv), the first phase of PERI started immediately in 2002 and ended in 2007. Its objectives were taken over by PERii programme, a second five-year phase which also ended in March 2013. However, many of PERii aspects have been continuing under the new programme which is "Strengthening Research and Knowledge Systems" (SRKS) programme (INASP-PERI, 2013).

PERii, the second phase programme, concentrated on sponsoring developing countries to subscribe to e-resources databases to make them available at different institutions. These aspects of PERii include training, advising, ICT-issues and publishing, as well as negotiating fair prices for journals and databases from many of the world's major publishing houses on behalf of the institutions in developing countries (INASP-PERii, 2011). According to Rosenberg (2008:xv), PERii intended to "build on and link the success and best practice from the first phase of PERI and integrate INASP's other programme work around library development, management and optimization of ICTs for research, and support for researchers in writing and communicating their work". Rosenberg adds that PERii's contribution is more focused on strengthening human capacities, supporting networks of people and systems and improving policy and practice. Through the PERii programme, electronic resources were made available at low cost to developing countries, for example, African countries (Adesoye & Amusa, 2013).

1.2.2 Tanzania

Tanzania was not left behind in the adoption and use of ICT. Early attempts at ICT adoption were made in 1997 and, in 2003, the National ICT policy was developed with the aim of empowering people by developing ICT infrastructure to facilitate socio-economic development country-wide (Materu-Behitsa, 2010:5). Moreover, Tanzania embarked on the National Information and Communication Technology Broadband Backbone (NICTBB), a project launched in 2009 with the aim of connecting the entire country with internet connections which are faster, reliable and affordable (Kowero, 2012:4).

Tanzania, as one of the INASP partner countries, has been exploiting this opportunity and has been subscribing to a number of journal databases available under the PERii programme, making them available for researchers, students, faculty members and others to access and use.

According to Manda (2005:269), the first innovative attempt to adopt the use of electronic resources in Tanzania was the adoption of CD-ROM in 1990s; however, the late 1990s marked the beginning of popularization of Internet use and Internet resources. Manda (2005:269) explains that the "INASP's initiative through the PERI project in 2001 was the first far-reaching attempt to introduce the use of full-text electronic journals in the research and academic community in Tanzania".

1.2.3 University of Dar es Salaam

The University of Dar es Salaam is one of the institutions which have been benefiting from the INASP initiative. The University of Dar es Salaam Library has been managing the PERii as a coordinating library (Manda, 2005:269). Subscriptions have been opened for several journal databases which are available for access and use by both the faculty members and the students, which includes the postgraduate students. This study is intended to assess the access and use of these PERii electronic resources by the postgraduate students at the University of Dar es Salaam and the study will focus on the access and use of e-journals by postgraduate students in support of their research.

1.3 Problem statement

PERii electronic resources are very important and are widely used by researchers, students, and faculty members to supplement printed resources. The studies by Rosenberg (2008:59, 69) and Harle (2010:11-15) show the importance and use of PERii electronic resources. Electronic resources are used by faculty members to prepare teaching materials; they are used by both the faculty members and the students to acquire information for research literature, they are used by students to get information for working on their assignments, and they are used as part of the learning process in order to increase knowledge (Manda, 2005:279; Ahmed, 2013b:297). Also, there are a lot of advantages of electronic resources when compared to printed resources. According to Adesoye and Amusa (2013), the advantages of electronic resources include the fact that they are flexible in searching; can be accessed anywhere at any-time; they can be downloaded, stored and printed; they can be manipulated

and many more. In spite of the advantages of the electronic resources, there are also some challenges in the access and use of electronic resources in Tanzania. The challenges include slow internet connection, limited access to PCs, lack of skills in searching electronic resources, unstable power supply, limited range of titles of resources, inability to access e-resources subscribed to by the institution from home, and lack of awareness of the resources by most of the students (Ahmed, 2013a:8; Manda, 2005:280). A number of studies have been done in regard to access and use of PERii electronic resources. However, most of the studies did not focus on a specific group, especially in the case of Tanzania. The present study will focus on access and use of PERii electronic journal resources by a specific group, which is the postgraduate students in the School of Education at the University of Dar es Salaam.

The main question is: Do the postgraduate students in the School of Education access and use PERii electronic journal resources at the University of Dar es Salaam?

In order to look for answers to the main question, several sub-questions were used; these sub-questions are as follows:

i. Are the postgraduate students in the School of Education aware of PERii electronic journal resources?

ii. How do postgraduate students access PERii electronic journal resources at the University of Dar es Salaam?

iii. What are the uses of PERii electronic journal resources by the postgraduate students at the University of Dar es Salaam?

iv. What are the constraints faced by postgraduate students in the access and use of PERii electronic journal resources at the University of Dar es Salaam?

v. What should be done to improve the access and use of PERii electronic journal resources at the University of Dar es Salaam?

1.4 Demarcation of the field of study/Scope and limitations

The study will be conducted at the University of Dar es Salaam and will involve the postgraduate students (Masters and Doctoral students) in the School of Education. This is due to the fact that Postgraduate students from the School of Education make the most use of the resources at the University according to statistical reports from the Library which shows that electronic journal resources are more heavily used by this group than other postgraduate students.

1.5 Justification for the research/Rationale for the study

This study on the assessing the access and use of PERii electronic journal resources by the postgraduate students at the University of Dar es Salaam, Tanzania, is significant because the knowledge which will be generated from this study will reveal patterns of use of e-resources and inform management decisions about resource balance and promotion of the resources, to maximize the investment potential.

The study is of significance as it will help those people who are responsible for the subscription of electronic journal resources and the Library to understand the available challenges, ways to overcome them, and ways to improve the access and use of electronic journal resources at the University of Dar es Salaam.

1.6 Overview of the literature

1.6.1 Introduction

This section presents the review of the literature relating to the access and use of PERii electronic resources. The section presents briefly an overview of PERii electronic resources; access of PERii electronic journal resources; use of PERii electronic journals resources; challenges encountered in the access and use of PERii electronic resources; and the research gap.

1.6.2 PERii electronic resources

Electronic resources are online information resources which are accessed using ICT infrastructures like computers, internet and so on. According to Agber and Agwu (2013:254), electronic resources are also known as online resources, digital resources, internet resources, computer resources and e-library resources and they refer to the "resources that are found on computer networks of organizations (intranets) or on the global network of millions of computers (Internet)".

PERii electronic resources are electronic resources which are provided under the PERii initiative programme which include electronic journals, electronic books and other electronic resources. Through the project of PERii, INASP in conjunction with research partners, librarians and information scientists in developing countries subscribe to electronic resources on behalf of its partner countries for example, African countries and make them available at low cost (Adesoye & Amusa, 2013).

The PERii initiative involved a number of stakeholders including some university libraries in Africa, Asia, Latin America, INASP and the donor communities; and the main objectives of this initiative was "to facilitate the acquisition of international information and knowledge by researchers in developing countries through acquisition of full-text online journals, current awareness databases and document delivery; to improve access to research information from developing countries through the establishment of institutional, national and regional online journal services for example, African Journals Online (AJOL); and to provide training in the use, evaluation and management of electronic Information and Communication Technologies" (Manda, 2005:269).

Tanzania is a partner country of INASP, as noted earlier. Currently, a lot of research and academic Institutions have been registered to use PERI electronic resources and the University of Dar es Salaam Library has continued to be a coordinating centre in Tanzania (Manda, 2005:269).

Some of PERii databases include the American Chemical Society Journals and Magazines, American Institute of Physics journals, American Physical Society, Annual Reviews, ASA-Journal of the Acoustical Society of America (JASA), ASABE Technical Information Library, and many others (INASP-Tanzania, 2013).

1.6.3   Access to PERii electronic resources

The availability of ICT has changed the approach to teaching, learning and research. The development and use of ICT and the availability of Internet services has enabled faculty members to prepare teaching materials using electronic resources; students to study and learn using electronic resources; and researchers to depend on the electronic resources in preparation for conducting researches. However, access to electronic resources depends on the availability of ICT infrastructure: notably, computers, bandwidth, and awareness on the availability of the resources.

The availability of computers and internet has enabled access to PERii electronic resources in most institutions. According to Manda (2005:274), a high level of access to PCs determines high level of access to electronic resources. Ahmed (2013b:290) argues that "access to electronic resources by the academic community in Bangladesh has been limited mostly due

to poor information technology (IT) infrastructure and the cost associated with such services". However, with the availability of computers and internet connection the majority of faculty members in Bangladesh started accessing electronic resources from their office, home, and from the internet café; and they indicated features important in accessing electronic resources to be access to up-to-date information, free availability, and full-text searching facilities as the popular features (Ahmed, 2013b:297).

Awareness is very important aspect in the access of PERii electronic resources. The study by Adesoye and Amusa (2013) found that awareness of the electronic databases and electronic resources helped the personnel in the tertiary health institution to access and use them. Ahmed (2013b:304) argues that increasing awareness of the service of electronic resources available should be encouraged to ensure effective use of electronic resources subscribed by the institutions under programmes like PERii.

According to Ahmed (2013b:304), "increase in the number of computers for public access in libraries, computer labs and residential halls and establishment of wireless internet network in the University campuses will ensure greater accessibility to technology and electronic resources".

1.6.4   Use of PERii electronic resources

Electronic resources have been widely used by different people nowadays including faculty members, students and researchers. Agber and Agwu (2013:255) argue that the greater the number of internet users found in a country, the greater the use of online electronic resources. According to the study by Ahmed (2013b:297), electronic resources were used by faculty members for learning, teaching, research and to obtain current information. This was also supported by the study by Manda (2005: 279), which showed that academic staff use electronic resources for searching literature for research purposes and teaching materials and graduate and undergraduate students use electronic resources to get information for working on their assignments and literature for research.

1.6.5   Challenges in the access and use of PERii electronic resources

The study by Manda (2005:280) found that there was limited access to Personal Computers (PCs) for student use in many of institutions in Tanzania. Limited access to PCs hinders access to electronic resources. Other challenges found by Manda include slow internet

connection; lack of skills in searching for electronic resources; unstable electricity supply/frequent power cuts; high internet café charges; and the prevalence of software viruses.

Also, the study by Ahmed (2013a:8) found the challenges in the access and use of e-resources to include limited range of licences for the use of such resources, limited access to computers and slow download speed, inability to access e-resources from home, difficulty to find relevant information and limited access to back issues.

Many students are not familiar with the electronic resource services available at their institutions (Ahmed, 2013b:304). This suggests the need for various methods of marketing and promoting the electronic resources to make them familiar with the available resources. Awareness of the available resources should be also raised using training; particularly Information Literacy training to users.

The study by Agber and Agwu (2013:274) mentioned the challenges as being the unstable power supply; high cost of access and usage of online resources, non-subscription for relevant online resources by institutions; slow connection to the internet and lack of sponsored training from the institutions.

1.6.6   The research gap

Electronic resources have been reported as important resources as they are used to supplement printed resources and are used for research purposes, for getting information to work on assignments, for preparing teaching materials and so on. A lot of studies have been conducted on the access and use of electronic resources in different institutions and different countries. However, there are insufficient studies on the access and use of PERii electronic journal resources by the specific group of users particularly the postgraduate students in Tanzania. This is the gap that the study is going to help to fill.

1.7 Overview of Research Methodology

1.7.1   Introduction

Research methodology is defined as a way of systematically solving the research problem (Kothari, 2004:8). This section discusses the research design, study area, population and sampling techniques, research methods, data collection method and instruments, pre-test of

research instruments, triangulation, ethical issues and data analysis which were employed in the study.

1.7.2   Research design

The study employed a cross-sectional design. The cross-sectional survey design is defined as an observational study that involves data collection from a population or a representative subset at one specific point of time (Wikipedia, 2014). Answers.com (2014) simply defines the Cross-Sectional survey design as the descriptive study that can be conducted on representative samples of a population. Hall (2008) argues that the cross-sectional survey design collects data to make inferences about the population of interest at one point in time and that it has been described as a snapshot of the populations about which the researcher gathers data. Cross-sectional design was chosen because it allows the use of more than one collection method, such as questionnaire, structured interviews, and observation. This multiple approach facilitates the collection of deeper insights into the views of respondents.

1.7.3   Study area

The study was conducted at the University of Dar es Salaam, in the School of Education, Tanzania.

1.7.4   Population of the study area

A population is defined as the group or collection that the researchers are interested in gathering information and from which they want to draw conclusions (Babbie, 2014:119). The University of Dar es Salaam has 21,440 undergraduate students (University of Dar es Salaam, 2013) and over three thousand postgraduate students enrolled at the University.

1.7.5   Sampling and Sampling techniques

1.7.5.1 Sample size

The sample size is defined as "the list items which are selected from the universe to constitute the sample of the study" (Kothari, 2004:56). Saunders, Lewis and Thornhill (2009:218) state that the "sample size of 30 or more will usually result in a sampling distribution that is very close to the normal distribution". Based on Saunders' idea, a sample size of one hundred postgraduate students were used in the study. Six Reference Librarians were also involved in the study.

1.7.5.2 Sampling Techniques

A non-probability sampling approach, namely purposive sampling, was used whereby only postgraduate students in the School of Education at the University of Dar es Salaam were involved in the study. Purposive sampling was also use to select the postgraduate students from two departments: thirty five postgraduate students from the department of Education Psychology and Curriculum Studies (30 Masters Students and 5 Doctoral students), and sixty five postgraduate students (60 Masters Students and 5 Doctoral students) from the department of Educational Foundations, Management and Lifelong Learning. Also, six Reference Librarians were purposively selected to be involved in the study.

1.7.6 Research Methods

The study used a combination of quantitative and qualitative methods. Quantitative methods are based on measurement of a quantity or amount which can be expressed in terms of quantity, while Qualitative methods refer to the type of research which is concerned with qualitative phenomenon, such as perception of quality or kind (Kothari 2004:3). Both methods were used in gathering data to answer research questions posed for this study.

The study used self-administered questionnaires with closed-ended and open-ended questions which were distributed to postgraduate students. The study also used a semi-structured interview to collect qualitative data. Interviews involved the Reference Librarians who are responsible for assisting students and other Library users to access PERii electronic journal resources. The Reference and Documentary Delivery Section has six librarians; all the Reference Librarians were interviewed.

1.7.7 Data collection methods

The data for this study were collected using combinations of questionnaires and interviews. The study use printed questionnaires to collect data from the postgraduate students. Face-to-face in-depth interviews were conducted and used to obtain more information to complement that obtained by using the questionnaire. These methods were used in order to improve the validity and reliability of data collected.

1.7.8 Data Instruments

The study used a questionnaire and interview guide developed by the researcher.

1.7.9 Data analysis

The study used the Statistical Package for Social Sciences (SPSS) software to analyze the collected data, summarize and organize it in order to answer the research questions. Content analysis was also used to analyze the data collected from the interviews.

1.7.10 Pre-test of Research Instruments

Pre-test is defined by Neuman (2007:117) as a procedure of developing or drafting one or more version of instruments and trying them before applying the final version. Instruments such as the questionnaire were pre-tested on a small sample number of the postgraduate students in Information Studies which have the similar characteristics with those in School of Education to ensure validity and reliability of the research instruments. Also the interview guide was pre-tested with some of the librarians at the University of Dar es Salaam. Questions which tended not to provide useful responses were discarded or revised.

1.7.11 Triangulation

Triangulation is defined by Babbie (2014:121) as the use of more than one research method to test the same finding. This is also a way of ensuring that quality data is collected. A combination of research instruments such as questionnaire and interview were used as data collection methods.

1.7.12 Ethical Issues

The study considered ethical issues. According to (Babbie 2014:64-70) ethical issues involve ethical norms of voluntarily participation and obtaining respondents consent, ethical norms of ensuring that no harm comes to participants as a result of participation in the study and protecting their anonymity and confidentiality, observing respondents' rights to privacy, and norms to analyze data and report findings ethically. In this regard, the researcher obtained the research clearance from the University of Pretoria as well as from the University of Dar es Salaam which introduced the researcher to the respondents; the researcher established a rapport with respondents by introducing herself before data collection; and assured the respondents that the collected information will be kept confidential.

1.8 Value of the Study

The results of the study is very important at the University of Dar es Salaam as it will bring awareness regarding the access and use of these resources; it will help in the improvement of

management of subscriptions to these resources at the University; it will help the Library to improve marketing of and promotion of electronic journals resources; and it will help to increase the access and use of electronic journal resources.

1.9 Clarification of key terms

1.9.1 Electronic Resource

An electronic resource can be defined as any information which is provided in the electronic format and can be accessed electronically using ICT equipment: for example, computers, iPad, e-book reader, etc.

1.9.2 Electronic journal database

An electronic journal database is the database which contains the collection of electronic journal information.

1.9.3 Access of resources

The term "access" can be defined to mean approaching, entering and browsing through the electronic information sources with the aim of searching for information of interest.

1.9.4 Use of resources

Use can be defined as the process of employing the obtained knowledge to various activities or purposes for example for research, or working on the assignment.

1.9.5 Awareness

Awareness refers to familiarity with certain information.

1.9.6 PERii

PERii is an acronym which stands for the Programme for Enhancement of Research Information which is run by the International Network for Availability of Scientific Publications (INASP).

1.10 Division of chapters

Chapter one of this study shows the scope of the study and the methods used. The chapter has the following sub-topics: introduction and background of the study; study problem and objectives; scope and limitation of the study; rationale of the study; overview of literature;

overview of research methodology; clarification of key terms; chapter division and the summary of the chapter.

Chapter two of the study explores the literature relating to the assessment of access and use of PERii electronic resources, aiming at showing what has already been done, the research gap and the need to fill that gap through the present study. The chapter is based on the following sub-topics: introduction of the chapter; PERii electronic resources; awareness of PERii electronic resources; access of PERii electronic resources; use of PERii electronic resources; challenges in the access and use of PERii electronic resources; access and use of PERii electronic journal resources in other African Universities; access and use of other electronic journal initiatives in Africa; the research gap and the summary of the chapter.

Chapter three of the study describes in details the methodological procedures used in data collection and generation. The chapter has the following sub-topics: introduction of the chapter; research methodology; research design; study area which include location and description of the study area; population of the study area; sampling and sampling techniques; instruments; data analysis; pre-test of research instruments; triangulation; ethical issues which arose in the study and the summary of the chapter.

Chapter four focuses on presentation of the collected data and discussion of the key findings. The presentation of data and discussion of key findings was guided by the research questions to provide answers in relation to the research objectives of the assessment of access and use of PERii electronic journal resources by the postgraduate students at the University of Dar es Salaam. The sub-topics under this chapter include the introduction; characteristics of respondents; awareness of PERii electronic journal resources by postgraduate students; access of PERii electronic journal resources by postgraduate students; use of PERii electronic journal resources by postgraduate students; challenges encountered in the access and use of PERii electronic journal resources; opinions on what should be done to improve access and use of PERii electronic journal resources; and the summary of the chapter.

Chapter five presents the summary of key findings, conclusion and recommendations. The sub-topics of this chapter include the introduction of the chapter; summary of key findings; conclusion; and the recommendations.

1.11   Summary

This chapter discussed the general introduction, background of the study, problem statement, demarcation of the field of study/scope and limitations, justification for the research/rationale for the study, overview of literature, overview of research methodology, value of the study, clarification of the key terms, and division of chapters.

The next chapter provides a review of the literature.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section presents the review of the literature relating to the access and use of PERii electronic resources. The section presents briefly an overview of PERii electronic resources; awareness of PERii electronic resources; access to PERii electronic journal resources; use of PERii electronic journals resources; challenges in the access and use of PERii electronic resources; access and use of PERii electronic journal resources in other African universities; access and use of other electronic journal initiatives in Africa; the research gap; and the summary of the chapter.

2.2 PERii electronic resources

PERii electronic resources are electronic resources which are provided under the PERii initiative programme which includes electronic journals, electronic books and other electronic resources. Through PERii, INASP, in conjunction with research partners, librarians and information scientists in developing countries, subscribes to electronic resources on behalf of its partner countries (for example, African countries) and makes them available at low cost (Adesoye & Amusa 2013).

The PERii initiative involves a number of stakeholders, including some university libraries in Africa, Asia, and Latin America, INASP and the donor communities; and the main objectives of this initiative are "to facilitate the acquisition of international information and knowledge by researchers in developing countries through acquisition of full-text online journals, current awareness databases and document delivery; to improve access to research information from developing countries through the establishment of institutional, national and regional online journal services for example, African Journals Online (AJOL); and to provide training in the use, evaluation and management of electronic Information and Communication Technologies" (Manda 2005:269).

INASP works in-depth with twenty-two partner countries in Africa, Asia and Latin America with eleven partner countries, namely Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe, on the African continent

(INASP, 2013a). Academic and research institutions in these countries are registered and are using PERii electronic resources.

Utilization of PERii electronic journal resources in Tanzania has been maximized through the Consortium of Tanzania Universities and Research Libraries (COTUL). COTUL has been facilitating the acquisition and availability of these resources. Forty-one universities and research institutions are registered under COTUL to use PERii electronic resources (EIFL, 2013). The University of Dar es Salaam Library has continued to be a coordinating centre in Tanzania (Manda, 2005:269, INASP, 2013b).

Some of the PERii databases include the American Chemical Society Journals and Magazines, American Institute of Physics journals, American Physical Society, Annual Reviews, ASA-Journal of the Acoustical Society of America (JASA), ASABE Technical Information Library, and many others (INASP, 2013b).

2.3 Awareness of PERii electronic resources

Awareness of the available electronic journal resources is very important in regard to access and use of these resources. Most of the users access and use electronic resources when they are aware of their availability. According to the study by Manda (2005:278), 86% of respondents were aware of PERI resources while 14% were not; Manda concluded that apart from the status of the users and their training, the level of use is also related to awareness of the availability of the electronic resources. Harle (2010:24) argues that "to make use of electronic resources students and staff need to be aware of the existing electronic resources, appreciate their scholarly value and know how to access and search them effectively". The study by Adesoye and Amusa (2013) found that awareness of the electronic databases and electronic resources helped the personnel in the tertiary health institutions to access and use them. A high level of use of the available electronic resources has been found by other researchers to be linked with high awareness of resources within the institution (Rosenberg 2008:56). Therefore, it would seem that checking awareness of these resources and, if necessary, developing a marketing approach for them, is a sensible institutional move (Ahmed, 2013b:304).

On the other hand, Shija (2009) comments that most of the library users in Tanzania are not aware of electronic resources and that PERii electronic journals are "not well known by many

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of the universities, colleges and research institutions and library users who are the main beneficiaries". According to Shija, this may be due to the fact that library staff lack library and marketing skills appropriate for their existing resources, including electronic resources. Gakibayo, Ikoja-Odongo and Okello-Obura (2013:17) argue that the lack of use of electronic resources at Mbarara University may be attributed to the lack of awareness amongst the students of the availability of the electronic databases and lack of awareness of the relevance and value of electronic resources.

In order to improve the level of awareness of the electronic resources available, various strategies have been used. These include promotion and marketing of these resources using flyers, emails, posters, newsletters, library websites, and so on; training the end-users with the aim of equipping them with necessary skills; and workshops to equip the users with skills and knowledge to use the resources (Rosenberg, 2008:30, 71, 102; Harle, 2010:25, Shija, 2009). Islam, Alam and Sultana (2011:43) argue that training programme and workshop on electronic journals should be arranged in order to increase awareness among the users and to inform them about the search interfaces, sophisticated retrieval skills and techniques of using electronic journals, as well as computer skills. On the other hand training, such as Information Literacy training, has been suggested to be included into the curricula of universities in order to give more emphasis to the acquisition of learning skills; this will help to generate information literate students and researchers (Kinengyere, 2007:340). Adesoye and Amusa (2013) support this by arguing that Information Literacy training should be "floated and if possible made part of the curriculum of medical and paramedical training" as it will help in equipping users with necessary skills for access and use of electronic resources.

Based on the above examples, and in the context of this study, there is little evidence indicating whether the postgraduate students in the School of Education are aware of the available PERii electronic journals at the University of Dar es Salaam. The study therefore intends to assess awareness of the available electronic journal resources; and to suggest ways to increase the level of awareness of the available electronic resources.

2.4 Access to PERii electronic resources

The availability of ICT has changed the way of facilitating teaching, learning and research. Smith et al., (2007) argue that increased access to reliable and up to date electronic resources has been motivated by the availability of cheaper ICT hardware and increasing internet

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coverage in Sub-Saharan Africa. The development and use of ICT and the availability of Internet services has enabled faculty members to prepare teaching materials using electronic resources; students have been able to study and learn using electronic resources; and researchers have begun to depend on the electronic resources in preparation for conducting researches. However, access to electronic resources depends on the availability and stability of ICT infrastructure (for example, computers, and adequate bandwidth), and awareness of the availability of the resources.

The availability of computers and internet has enabled access to PERii electronic resources in many of Institutions. According to Manda (2005:274), high level of access to PCs also determines high level of access to electronic resources. Ahmed (2013b:290) argues that, "access to electronic resources by the academic community in Bangladesh has been limited mostly due to poor information technology (IT) infrastructure and the cost associated with such services". However, with the increased availability of computers and internet connection the majority of faculty members in Bangladesh started accessing electronic resources from their office, home, and from the internet café; they also indicated features important in accessing electronic resources to be provision of up-to-date information, free availability and full-text searching facilities, as the popular features (Ahmed, 2013b:297).

According to Ahmed (2013b:304), "increase in the number of computers for public access in libraries, computer labs and residential halls and establishment of wireless internet network in the university campuses will ensure greater accessibility to technology and electronic resources".

The present study intends to find out ways by which the postgraduate students in the School of Education access PERii electronic journal resources at the University of Dar es Salaam. The study will find out whether the availability of PCs, laptops and other ICT devices facilitates access to electronic resources for postgraduate students, as has been the case with similar studies highlighted above. The study will also attempt to identify other factors that facilitate access to electronic resources, in addition to the availability of ICT devices.

2.5 Use of PERii electronic resources

According to the study by Ahmed (2013b:297), electronic resources were used by faculty members for learning, teaching, research and to obtain current information. Faculty members

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use the electronic resources to learn with the purpose of increasing their knowledge as well as using electronic resources when they are preparing teaching materials. Also, the faculty members use the electronic materials for research purposes. This was also supported by the study by Manda (2005:279), which showed that academic staff use electronic resources mainly for searching literature for research purposes and teaching materials.

Electronic resources are also used by graduate and undergraduate students for various purposes. According to Manda (2005:279) graduates and undergraduate students tend to use electronic resources to get information for working on their assignments and literature for research. The study by Ahmed (2013a:7) indicates that the students use electronic resources for the purpose of learning, obtaining current information, and for research.

The study by Adesoye and Amusa (2013) states that electronic resources have been used by Healthcare personnel in tertiary institutions for professional and academic practices which include clinical work, research and teaching as well as obtaining general information on healthcare to update their knowledge.

Researchers also use electronic journal resources. According to Amjad, Ahmed and Naeem (2013:317), research scholars have become largely dependent on electronic resources and have adopted them as common tools in their academic activities. The main purpose for using the electronic journal resources is for learning, research purposes and to up-date knowledge in their research areas (Amjad, Ahmed & Naeem (2013:325).

The study by Islam, Alam and Sultana (2011:37) reported that academic staff and students at Dhaka University use electronic resources for the purpose of research needs, education and current information, recreational and for winning scholarships and other awards.

Generally, electronic resources have been used for learning and preparing teaching materials; they have been used for research purposes; they have been used for working on assignments and preparing for exams; and they have been used to obtain current information as well as updating the knowledge.

2.6 Challenges in the access and use of PERii electronic resources

Various challenges hampering the access and use of PERii electronic journal resources have been reported. The challenges are discussed below.

2.6.1 Limited access to PCs

The study by Manda (2005:280) found that there was limited access to Personal Computers (PCs) for student use in many of the institutions in Tanzania. This is supported by the study by Harle (2009:10) which states that in African universities ICT facilities are relatively underdeveloped. According to Harle (2009:10), the ATICS survey found that computers are shared by an average of 55 people in African universities, while the SARUA survey indicates that in the Southern African Development Community (SADC) region computers are shared by an average of 40 students (full-time and part-time) and two teaching staff per computer. Limited access to PCs hinders access to electronic resources.

The study by Shija (2009) also reported poor infrastructure as the challenge hindering access and use of electronic resources in Tanzania. Several libraries in Tanzania do not have sufficient computers and some do not have any computers for users to access electronic journal resources (Shija, 2009). Moreover, not all the users in Tanzania are capable of having mobile ICT devices like laptops, smartphones, and others to help them to access and use electronic resources.

2.6.2 Inadequate bandwidth and slow download speed

Slow internet connection is another challenge which has been identified by various studies. The study by Manda (2005:280) specifies that slow internet connection has been a problem hindering access and use electronic resources. According to Manda (2005:272) the capacity of bandwidth for many libraries in Tanzania was less than 1MB per second, while only one library (The University of Dar es Salaam Library - main Campus) had 2MB per second. This promoted frequent complaints by users that access to internet was not adequate and that there is slow system speed (Manda, 2005:273). Shija (2009) reported that many users in Tanzania experience bandwidth ranging from 16 to 32 kbps; a few are below this, in the range of 8-16 Kbps; few users are able to enjoy bandwidth of above 32Kbps; the bandwidth overall has been termed to be very low. AGORA, writing in 2000, cited in Shija (2009) specifies a bandwidth size of 56 Kbps and above as being the necessary minimum in order to support access of electronic journal resources from the electronic journal databases. Inadequate

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bandwidth makes access somewhat difficulty and contributes to poor internet connectivity and failure to access electronic resources (Shija, 2009). Harle (2009:10) argues that students and academic staff are forced to use private internet cafés to access electronic resources due to poor internet access. The study by Harle (2009:14) point outs that accessing and downloading of materials is not always possible due to poor bandwidth and connectivity. Harle (2009:14) reports that half of libraries in Tanzania had slow connection speed and unreliable connections which, in turn, hamper access to the available electronic resources. Slow download speed was also reported by the study by Ahmed and is identified as a "major constraint significantly related to overall satisfaction with the university subscribed resources" (Ahmed, 2013b:301).

2.6.3   Power outage

Power outage is another challenge which has been reported by various studies (Manda, 2005:281; Agber & Agwu, 2013:274). The study by Manda (2005:281) commented that there was unstable electricity supply due to the frequency of power cuts in Tanzania. This was supported by the study by Shija (2009), which also commented that unreliable electricity and frequent power cuts disrupt the availability of the internet. It was also reported that Nigeria was bedeviled with unreliable and erratic power supply, a situation which make it difficult for sensitive electronic equipment such as computers to function properly (Agber & Agwu, 2013:260).

2.6.4   Lack of searching skills

The study by Manda (2005:280) argues that forty-seven percent of graduate students and thirty-nine percent of academic staff mentioned a lack of skills in searching electronic resources as a problem. This was reported also by Shija (2009) who indicates that the challenge involving access and use of electronic journals includes lack of a good command of skills on how to use the computer and internet. Without adequate skills it becomes difficult to access and use electronic journals. Gakibayo, Ikoja-Odongo and Okello-Obura (2013:17) argue that "lack of retrieval skills and other computer skills limit student's ability to effectively access electronic resources" and that; these are necessary skills to enable access and use of electronic resources. Harle (2009:16) also supports the contention that users must be given the necessary skills to identify and locate the information they need for their work.

2.6.5   Lack of awareness of the available resources

Awareness of the available electronic journal resources is also a problem. Many students are not familiar with the electronic resource services available at their institutions and hence fail to appreciate the value of these resources as research tools (Ahmed, 2013b:304). This leads them to fail to access and use the electronic resources available. The study by Manda (2005:276) mentioned that lack of widespread awareness of the availability of range of full-text journals was still a problem to many institutions in Tanzania. This was also supported by the study by Rosenberg (2008:56), who commented that "lack of awareness of the wide range of electronic resources available contributed to the low level of use of library resources".

2.6.6   Lack of training regarding access and use of electronic resources

The study by Manda (2005:277) observed that many institutions do not provide end-user training, leading to users being unaware of how to access and use electronic journal resources. Additionally, Shija (2009) observed that lack of adequate training regarding the use of ICT and internet hinders access and use of electronic journal resources. Many institutions provide training through workshops or seminars, where library users are requested to register voluntarily, or by providing informal training, mainly to few library users who visit the library (Manda, 2005:277). Kinengyere (2007:339) argues that underutilization of electronic resources may be due to unawareness of the resources available or because users do not know how to access them: this is a situation which calls for training and the suggested training should be Information Literacy training. Gakibayo, Ikoja-Odongo and Okello-Obura (2013:17) argue that "students need training in wider range of ICT applications for them to make full use of technology in utilizing e-resources".

2.6.7   Inability to access the electronic resources from home

Various studies have reported the challenge of inability to access electronic resources from home. According to Ahmed (2013b:302), faculty members reported inability to access electronic resources from home as a problem. The resources are accessed when users are on a university compound and, thus, access is limited to computers within its network infrastructure.

2.6.8   Inadequate funds

Inadequate funds is another challenge which has been facing many academic and research institutions (Shija, 2009). According to Shija (2009), funding is always required to provide

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training to increase users' skills with ICT and access to, and use of, electronic journals; funding is required to improve the infrastructure including computers and bandwidth; funding is required for subscriptions to resource services, and so on.

2.6.9　　　Underuse of electronic resources

The study by Harle (2009:14) indicates that some of the libraries are discouraged from registering to use electronic resources because they feel unable to manage electronic resources access adequately. An evaluation study of access to electronic resources in Tanzania depicted that electronic resources were underused on the whole and some Tanzanian libraries have not even registered for access, despite the resources being advertised each year by the central coordinator, the University of Dar es Salaam Library (Harle, 2009:14).

2.6.10　　　Difficulty to find relevant information

This is another challenge identified by various studies. The study by Ahmed (2013b:301) reported that faculty members complained about inability to find relevant information. This was also supported by the study by Ahmed (2013a:8) which found that students were facing the problem of finding required information; thus the study indicated that there was a significant relationship between difficulty in finding relevant information and opinion on overall satisfaction at the University.

2.6.11　　　Challenges as reported by other scholars

Other challenges reported by Manda (2005:281), which have been indicated by both students and academic staff, include servers being down; high internet café charges; the prevalence of software viruses; the prevalence of pornography and too many resources.

Also, the study by Ahmed (2013a:8) found the challenge in the access and use of e-resources to include the limited number of electronic journal titles with enhanced content, limited access to computers in the University and slow download speed, and difficulty in finding relevant information.

The study by Agber and Agwu (2013:274) mentioned the challenges as being inadequate coverage of health information sources from Africa, and Nigeria in particular; high cost of subscribing to electronic databases and websites because many of them are not available free of charge; problems of accessing the resources, such as high cost of the internet access,

network failure, inadequate power supply, and obsolete equipment; lack of adequate skills in accessing the resources as most of the users need basic advanced IT training on information findings/research, difficulty of web searching, faulty operation of IT equipment and the need for troubleshooting; inadequate electronic information resources as there are few facilities to access the resources compared to the number of healthcare professionals who need them; excessive workload which limits the time users have to search for electronic resources; and lack of information skills to access the resources, since electronic information sources are not organized and classified.

The study by Omotayo (2010:6) identified the challenges regarding access and use of electronic journal resources to include power failure, systems breakdown, and slowness of servers due to bandwidth problems.

Moreover, the study by Owolabi et al. (2012) identified the challenges facing the faculty members in access and use of electronic resources at the University of Ibadan as low bandwidth; erratic power supply; lack of finance; and inadequate computer skills.

Islam, Alam and Sultana (2011:41) report the challenges in the access and use of electronic resources to include lack of knowledge and awareness of electronic journals among the users (particularly, most of the students); lack of adequate funds to subscribe to more electronic journals; lack of knowledge about the links to electronic journals; lack of computer skills -- particularly, how to operate a computer -- as well as more general computer skills; most of students have a stronger interest in accessing various search engines than accessing information through electronic journal databases; lack of adequate computer lab facilities; and lack of training and orientation programmes to create awareness of using electronic journal resources and the values of using them.

Other challenges hindering access and use of electronic resources were indicated by the study by Amjad, Ahmed and Naeem (2013:325) to include lack of internet connectivity; credibility and quality issues; information overload; difficult interface design; instability of electronic resources; problems of discomfort with online reading; lack of searching techniques; lack of guidance from teachers, retrieval issues, difficulty of requesting intermediate help; and computer illiteracy.

Shija's and Manda's findings which reported that there were poor ICT infrastructure hindering access and use of electronic resources in Tanzania were discussed earlier; however, many universities and research institutions in Tanzania have been trying to increase the number of computers. For example, the study by Kagugu (2011:3) indicated that the Open University of Tanzania had over 400 computers at the headquarter and its centres located in Dar es Salaam, while its Library had 30 computers for students to access and use. Again, the study by Luambano and Nawe (2004:13) indicates that the development of ICT at the University of Dar es Salaam started in the mid-1990s: the establishment of the ICT Policy and ICT Master Plan was regarded as crucial for successful application of the ICT at the University and also the University was connected to the Internet through the University Computing Centre (UCC). Since then, the number of computers at the University has been growing to support teaching, learning and research. According to Luambano and Nawe (2004:13), availability of Internet at the University of Dar es Salaam changed the learning environment and supported access and use of wide range of journal databases in various disciplines provided under PERii programme.

2.7 Access and Use of PERii electronic journal resources in other African Universities

PERii electronic journal resources have been of importance to both African universities and research institutions. Students, faculty members and researchers access and use them to meet their information needs. A number of African universities have been using PERii electronic resources.

2.7.1   Access to PERii electronic resource in Ghana

Ashesi University in Ghana accesses about 7,000 online journal titles free of charge to research and academic institutions through PERii programme (Dadzie, 2005:295). According to Dadzie (2005:295), under the PERii programme, it managed to subscribe to ten databases within the PERii project and access and use of these databases have been facilitated by a developed technological infrastructure, including satellite dishes, which provide the Local Area Network, and wireless "hot spots" that provides WiFi access to users.

Access to and use of PERii electronic resources at the Ashesi University in Ghana is not high as there are a number of problems. According to Dadzie (2005:295), the main problems users had with accessing and using electronic resources include an inadequate number of PCs; lack of information about how to use electronic resources; and lack of time to acquire skills needed

to use resources. Also, it seems that the users lacked awareness of the available electronic resources. Therefore, users required training to increase awareness of electronic resources and equip them with necessary skills on how to access and use them. The need to introduce information competency across the curriculum, with active involvement of faculty or the introduction of a one-unit course to teach information competency at all levels at the University, was considered important (Dadzie, 2005:296).

2.7.2 Access to PERii electronic resources in Uganda

Academic and research institutions in Uganda, including Makerere University, Martyrs University, Nkozi and National Agricultural Advisory Services (NAADS), also access and use electronic journal resources provided under PERii programme. In order to increase the utilization of PERii electronic resources, the Ugandan Universities formed the Consortium of the Uganda University Libraries (CUUL). The consortium of the Uganda University Libraries is the "co-operative association of libraries that enables systematic and effective co-ordination of resources for improving services to users" (Kinengyere, 2007:329). Through CUUL, subscriptions to electronic resources are managed and the cost of subscription is shared among the members of the CUUL.

Utilization and maximization of access and use of electronic resources have been increased through various approaches such as creating greater awareness and use through:

- information literacy training, whereby users are exposed to available databases, for example, journal databases like EBSCOHOST, Emerald and others, as well as training users on how to access them and use them effectively;
- workshops have also been used to provide the researchers, policy-makers, educators, librarians and extension specialists with the tools to take advantage of access to high-quality, relevant and timely information;
- training programmes for new and fresh students have been used to empower students with skills on how to access available electronic information resources; for example, at the Makerere University the students have been receiving the "Information management and competency course" (Kinengyere, 2007:333).

Challenges affecting access and use of electronic resources in Uganda were reported to include shortage of computers for all library users; limited bandwidth affecting many

institutions resulting in low internet speed; and power interruption as elsewhere in Africa (Kinengyere, 2007:339).

2.7.3 Access to PERii electronic resources in Kenya

In Kenya a number of Universities and research institutions, including public and private institutions, have been reported as having access to electronic journal resources. According to Shibanda (2006), access to electronic journals in Kenya is facilitated also by PERii programme, and utilization of these electronic journals is done under the Kenya Librarian and Information Services Consortium.

However, utilization of these resources is reported to be low due to various challenges. Shibanda (2006) identifies the challenges as inadequate competence/computing skills; inadequate broadband networks; inadequate workstations is a problem affecting all universities in Kenya; and lack of end-user training to all universities at different levels. Problems related to IP vs password access to e-journals were also reported: access to some of journal databases is by IP address recognition on the Local Area Network (LAN), while some require username and passwords. Other problems include low speed of connectivity; difficulties with payment of subscriptions, which affected two libraries in Kenya; inadequate staffing levels at all universities in Kenya; discouragingly-high prices of connectivity; and power surges -- that is, low/high voltage fluctuations and blackouts.

2.7.4 Access to PERii electronic resources in Malawi

Like in other countries, Malawi also established its own initiative with the aim of increasing utilization of electronic journals. According to Malemia (2014) Malawi's main initiative is the Malawi Library and Information Consortium (MALICO). MALICO has been receiving financial support from various partners such as INASP, eIFL, WHO, FAO, UNEP, and UNESCO to support the subscription of electronic journals.

Access and use of electronic resources were influenced by self-instruction and thus a greater need for support in terms of knowledge of the sources that were available (Malemia, 2014). According to Malemia (2014), electronic resources in Malawi are used for various purposes including research purposes; teaching purposes and for seminars and papers.

The major constraint reported in relation to accessing electronic journals was slow internet speed (Malemia, 2014). Other challenges listed by Malemia include intermittent electricity, lack of personal computer access, slow internet, difficulty in reading from the screen, lack of training, apparent difficulty in use, lack of journals on particular disciplines and fields, lack of awareness of electronic journal services, and access to good journals being restricted to campus networks.

2.8 Access and Use of other electronic journals initiatives in Africa

There have been programmes other than PERii in Africa for providing full text journals:

2.8.1 HINARI.

According to Smith et al. (2007), in 2002 the World Health Organization (WHO) launched the HINARI programme which, like PERii, also allows free access to full text journals in academic and medical institutions, teaching hospitals, and government offices. Lwoga et al. (2007:2) comment that HINARI "provides free or low-cost access to journals and key databases in health, medicine, and related biosciences". The major users of HINARI electronic resources are the universities, teaching hospitals and research institutes in different countries in Africa (Lwoga et al., 2007:3).

Access and use of HINARI full text journals varies from one country to another, depending on the level of awareness of the available electronic journal articles. Smith et al., (2007) argue that awareness of the HINARI initiative varied widely by country whereby in some countries awareness was very low, for example in Cameroon, and in some countries awareness was high, for example in Uganda, due to extensive awareness raising workshops, institutional training and promotion done in Uganda. The study by Lwoga et al., (2007:6) indicated that HINARI and other initiatives have been promoted using Information Literacy training programmes, posted announcements on notice boards and email discussion groups that connect scientists and researchers within the university. Using these methods, awareness of HINARI electronic resources was increased and, hence, the use of the resources at the Sokoine University of Agriculture.

Like the PERii electronic journal resources, access to and use of HINARI electronic journals have challenges including power interruption; difficulty to acquire password to log-in the databases from institutional gatekeepers (respondents have to acquire password from the

librarians); inadequate internet connection and computing facilities; slow internet speed; logging-in failure; and the fact that some of the articles are not free (Smith et al., 2007).

2.8.2   AGORA

Another initiative other than PERii is Access to Global Online Research in Agriculture (AGORA). According to Lwoga et al. (2007:2), AGORA commenced in October 2003 and is a sister portal led by the Food and Agriculture Organization (FAO). Like the previous initiatives, AGORA also provides access to electronic journal resources. Also, like HINARI initiatives, AGORA is widely used by universities, teaching hospitals and research institutes. Countries with most institutions registered to AGORA in Africa include Nigeria, Ghana, Tanzania, Ethiopia, and Kenya and over a half of institutions registered for AGORA are located in Africa (Lwoga et al., 2007:3).

Access and use of AGORA electronic resources have been influenced also by awareness of the resources. Information literacy training, advertising the resources on notice boards, and email group discussion have played a great role in raising awareness of the resources and encouraging their use (Lwoga et al., *(*2007:6).

Challenges which have been hindering access and use of AGORA electronic resources include inadequate ICT infrastructure: for example, lack of computers; inadequate bandwidth which leads to slow internet connectivity; lack of searching skills; and many others (Lwoga et al., 2007:9).

2.8.3   TEEL

The Essential Electronic Agriculture Library (TEEL) is another important initiative for providing electronic resources. TEEL was developed by the Cornell University's Mann Library in 1998-1999 with the aim of pioneering the way for electronic scientific journal delivery (Lwoga et al., 2007:2). According to Lwoga et al. (2007:2), "TEEL is a self-contained collection of over 145 scientific journals from major publishers spanning 1993-2005".

Like HINARI and AGORA, TEEL is widely used in universities, teaching hospitals and research institutes. TEEL has been indicated as essential tools for research, education and public policy formulation (Lwoga et al., 2007:4).

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Access and use of TEEL is widely influenced by marketing and promotion procedures which have been indicated in other initiatives, particularly in AGORA and HINARI programmes. Likewise, the challenges are the same as in AGORA and HINARI, particularly inadequate infrastructure, inadequate bandwidth, lack of searching skills, lack of trained staff, lack of enough funds to support access and use of the resources, low statistics of usage, inadequate access to local content particularly journals from developing countries, and inadequate awareness of the resources (Lwoga et al., 2007:8-9)

2.8.4 OARE

The Online Access to Research on the Environment (OARE) is also another initiative providing electronic journal resources in Africa. According to Lwoga et al. (2007:2), OARE was developed under the leadership of the United Nations Environment Program (UNEP) and it focus is on the environment. OARE was launched in October 2006 (Lwoga et al., 2007:2).

Similar to HINARI, AGORA, and TEEL; OARE have been promoted to increase access and use using Information Literacy training programmes, using email discussion, as well as advertising the resources on notice boards (Lwoga et al., 2007:6).

The challenges hindering the access and use of OARE electronic resources have been the same in almost all African countries, including lack of ICT infrastructure, inadequate bandwidth, lack of searching skills, lack of trained staff, lack of enough funds to support access and use of the resources, low statistics of usage, inadequate access to local content particularly journals from developing countries, and inadequate awareness of the resources (Lwoga et al., 2007:8-9).

The study by Lwoga et al. (2007:10) concluded that initiatives such as HINARI, AGORA, TEEL and OARE provide better access to science scholarship in developing countries, enabling universities, hospitals and research institutes to improve sustainable agriculture development, public health and health care delivery and environment conservation. However, some other factors hindering access and use of these resources, which also have an impact on the improvements on the above mentioned sectors, should be addressed and removed.

2.9 The research gap

Electronic resources have been reported as important resources as they are used to supplement printed resources and are used for research purposes, for getting information to work on assignments, for preparing teaching materials and so on. Various studies have been conducted on the access and use of electronic resources in different institutions and different countries. However, there are insufficient studies on the access and use of PERii electronic journal resources by the specific group of users in Tanzania, particularly the postgraduate students. This is the gap that the study is going to help to fill.

2.10   Summary

This chapter reviewed the literature relating to access and use of PERii electronic journal resources. It pointed out that most of the users access and use electronic resources when they are aware of the availability of the resources; access to electronic journal resources has been possible due to increased access to PCs and other ICT devices; electronic journal resources have been used for different purposes including learning, teaching and research. The chapter also has discussed other electronic journal resources obtained from other initiatives: for example, HINARI and others in other countries of Africa. However, some challenges have been pointed out in the access and use of PERii electronic journal resources as well as other electronic journals obtained from similar initiatives.

The next chapter focuses on the methodological procedures underlying data collection and generation.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the research methodology applied in this study. The chapter is divided into sections which discuss the research design, study area, population and sampling techniques, research methods, data collection method and instruments, pre-test of research instruments, triangulation, data analysis and ethical issues which were encountered in the study.

3.2 Research Methodology

Research methodology is defined as a way of systematically solving the research problem (Kothari, 2004:8). According to Kothari (2004:8) research methodology entails the consideration of research methods, the logic behind the methods to be used in a study and discussion of the reasons for choosing a particular method or technique, in order that the results of the study are capable of being evaluated by the researcher themselves as well as the others.

3.3 Research design

A research design is defined as the "arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure; it is the conceptual structure within which research is conducted and constitutes the blueprint for the collection, measurement and analysis of data" (Kothari, 2014:31). Research design "deals with the detailing of procedures that will be adopted to carry out the research study" (Krishnaswamy, Sivakumar and Mathirajan, 2006:24).

The study employed the cross-sectional survey design. The cross-sectional survey design is defined as an observational study that involves data collection from a population or a representative subset at one specific point of time (Wikipedia, 2014). Answers.com (2014) simply defines the cross-sectional survey design as the descriptive study that can be conducted on representative samples of a population. Hall (2008) argues that the cross-sectional survey design collects data in order to make inferences about the population of interest at one point in time and that it has been described as a snapshot of the populations about which the researcher gathers data. Neuman (2007:17) refer to cross-sectional design as

the simplest and least costly method; and that it can be exploratory, descriptive, or explanatory, and is consistent with a descriptive approach to research. Cross-sectional design was chosen because it allows the use of more than one collection method such as questionnaire, structured interview, and observation, thus allowing for cross-checking of responses. According to Hall (2008) cross-sectional survey data can be collected using any mode of data collection for example, telephone interviews in which landline telephones are called, telephone interviews in which cell phones are called, face-to-face interviews, mailed questionnaires, self-administered questionnaires, electronic mail, Web data collection and so on. In this regard, this study used self-administered questionnaire and interview methods for collecting data.

3.4   Study area

The study was conducted at the University of Dar es Salaam, Tanzania. The University of Dar es Salaam has four Colleges at the campus, two Constituent Colleges, four Schools, four Institutes, six Centres and other units. It has 21 million undergraduate students (University of Dar es Salaam, 2013:2) and 2,435 postgraduate students enrolled at the University (University of Dar es Salaam, Directorate of Postgraduate Studies 2014:8).

The study was conducted in the School of Education. It involved the postgraduate students, a category that includes the Masters and Doctoral students. The postgraduate students in the School of Education were chosen because, according to the statistical report obtained from the Library, they make the most use of the electronic journal resources at the University.

3.5   Population

A population is defined as the group or collection about which the researchers are interested in gathering information and from which they want to draw conclusions (Babbie, 2014:119). Neuman (2007:371) defines a population as the "name for the large general group of many cases from which a researcher draws a sample and which is usually stated in theoretical terms". Also, Gray (2004:82) defines a population to refer to the "total number of possible units of elements that are included in the study". This study involved the postgraduate students, which includes the Masters and Doctoral students in the School of Education, as well as Reference Librarians from the Reference and Documentary Delivery Section of the University of Dar es Salaam Library.

3.6   Sampling and Sampling techniques

3.6.1   Sample size

The sample size is defined as the number of items which are selected from the universe to constitute the sample of the study; and that the size of sample should neither be excessively large, nor too small; it should be optimal (Kothari 2004:56). Saunders, Lewis and Thornhill (2009:218) state that the "sample size of 30 or more will usually result in a sampling distribution for the mean that is very close to the normal distribution" and that "the larger the absolute size of a sample, the more closely its distribution will be to the normal distribution". The School of Education has 321 Masters Students and 32 Doctoral students. The study involved only a hundred postgraduate students: ninety Masters students and ten Doctoral students. Both samples were selected because they constitute about one third of their respective populations and thus conform to the advice from Kothari (2004) and from Saunders, Lewis and Thornhill (2009).

3.6.2   Sampling Techniques

A non-probability sampling, namely purposive sampling, was used in this study. Purposive sampling has been defined by Babbie (2014:200) to be the type of non-probability sampling in which the units to be observed are selected on the basis of the researcher's judgment about which ones will be the most useful or representative. In purposive sampling the researcher selects cases to be involved in the study with specific purpose in mind (Neuman, 2007:142). Saunders, Lewis and Thornhill (2009:237) argue that purposive sampling enables the researcher to use his/her judgment to select cases that will best answer his/her research questions and meet the researcher's objectives. According to Corbetta (2014:222), in purposive sampling units are chosen on the basis of some of their characteristics. In this regard purposive sampling was used to select only postgraduate students in the School of Education at the University of Dar es Salaam to be involved in the study. Purposive sampling was used to select postgraduate students from two departments; thirty-five postgraduate students from the department of Education Psychology and Curriculum Studies (30 Masters students and 5 Doctoral students), and sixty-five postgraduate students (60 Masters students and 5 Doctoral students) from the department of Educational Foundations, Management and Lifelong Learning.

Also, six Reference Librarians were purposively selected to be involved in the study because they are the ones who help the students and other Library users to access the electronic journals at the University of Dar es Salaam.

3.7   Research Methods

Research method is defined by Kumar (2008:4) as all the methods and techniques that are used for conducting research. The study used a combination of quantitative and qualitative methods. Quantitative method is based on measurement of quantities or amounts and the result can be expressed in terms of quantity (Kothari 2004:3). Neuman (2007:20) notes that the techniques for collecting quantitative data include surveys, experiments, content analysis and existing statistics.

Qualitative methods refer to the type of research which is concerned with qualitative phenomenon such as relating to or involving quality or kind (Kothari 2004:3). According to Neuman (2007:21), the techniques for data collection in qualitative methods include field research and historical-comparative research. Both methods are regarded as equally important as they have assisted in answering the research questions for this study.

The study used self-administered questionnaires with closed-ended and open-ended questions which were distributed to postgraduate students. The study also used a semi-structured interview to collect qualitative data. Interviews involved the Reference Librarians who are responsible for assisting students and other Library users to access PERii electronic journal resources. The Reference and Documentary Delivery Section has six librarians; all the Reference Librarians were interviewed.

3.8   Data collection methods

The data for this study were collected using a combination of methods consisting of self-administered questionnaires and semi-structured interviews. The study used printed questionnaires to collect data and these were distributed to postgraduate students in the School of Education in two departments as indicated earlier. Face-to-face in-depth interviews were conducted with six Reference Librarians. The interviews were used to obtain more information which was not obtained by using the questionnaire. These methods were used in order to ensure the validity and reliability of data collected by facilitating some cross-checking of responses.

3.9 Data Instruments

3.9.1 Questionnaire

Self-administered questionnaires with open-ended and closed-ended questions were used as the instrument for collecting data. The questionnaires were distributed to postgraduate students, both Masters and Doctoral students.

3.9.2 Interview

Face-to-face in-depth interviews with semi-structured questions concerning key issues were also used as an instrument for collecting data, whereby the researcher interviewed the Reference Librarians to complement the information collected from the questionnaires and obtain more information which was not provided by the postgraduate students.

3.10 Pre-test of Research Instruments

Pre-test is defined by Neuman (2007:117) as a procedure of developing or drafting one or more version of instruments and trying them before applying the final version. Instruments such as the questionnaire were pre-tested on a small sample number of the postgraduate students in Information Studies which have the similar characteristics with those in School of Education to ensure validity and reliability of the research instruments. Also the interview guide was pre-tested with some of the librarians at the University of Dar es Salaam. Questions which tended not to provide useful responses were discarded or revised.

3.11 Triangulation

Triangulation is defined by Babbie (2014:121) as the use of more than one research method to test the same finding. Gray (2004:257) defines triangulation as the use of multiple methods of data collection methods, hence helping in improving the reliability of a study. It is referred to as an approach using several kinds of methods or data to study a topic (Punch, 2006:157). This is also a way of ensuring that quality data is collected. A combination of research instruments such as questionnaire and interview were used as data collection methods.

3.12 Data analysis

The study used the Statistical Package for Social Sciences (SPSS) software and content analysis to analyze the collected data, summarize and organize it in order to answer the research questions. SPSS software was used to analyze quantitative data, while content analysis was used to analyze the qualitative data.

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3.13 Ethical Issues

The study considered ethical issues. According to (Babbie 2014:64-70) ethical issues involve ethical norms of voluntarily participation and obtaining respondents consent, ethical norms of ensuring that no harm comes to participants as a result of participation in the study and protecting their anonymity and confidentiality, observing respondents' rights to privacy, and norms to analyze data and report findings ethically. In this regard, the researcher established a rapport with respondents by introducing herself before data collection; obtained respondents consent, observed their right to privacy, and assured the respondents that the collected information will be confidential and will be analyzed and reported ethically.

Ethical clearance for conducting research was obtained from the University of Pretoria. The clearance helped the researcher to obtain the permission (Research Clearance) from the University of Dar es Salaam to conduct research in the School of Education.

3.14 Summary

The chapter discussed the methodology used in this study. The study employed a cross-sectional survey to conduct the research at the University of Dar es Salaam. The study involved the postgraduate students in the School of Education. Quantitative and qualitative methods were used in this study. Data was collected using self-administered questionnaires which were distributed and filled by the postgraduate students; and interviews were conducted with the Reference Librarians. The collected data was analyzed, summarized and organized using SPSS and content analysis. Ethical procedures were observed throughout the study.

The next chapter presents the data and discusses key findings.

CHAPTER FOUR: RESEARCH RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data and discusses the key findings on assessing the access and use of PERii electronic journal resources by postgraduate students in the School of Education at the University of Dar es Salaam. Data is presented and discussed in accordance with the research objective and research questions indicated in Chapter one. The chapter contains the following sections: characteristics of respondents; awareness of PERii electronic journal resources; use of PERii journal resources; challenges encountered in the access and use of PERii electronic journal resources; and suggestions about the ways to improve access and use of PERii journal resources.

4.2 Characteristics of the Respondents

The characteristics of respondents were important in this study, with the aim of understanding the nature of the respondents involved in the study. The characteristics considered were the degree programme the postgraduate students are taking and the department with which they are registered.

4.2.1   Degree Programme

Table 1: The registered Degree programme

Variable	Category	Frequency	Percent
Degree Programme	Masters	90	90
	PhD	10	10
	Total	100	100

Source: Field data (2014)   N = 100

Table 1 above shows the Degree programme taken by postgraduate students who were involved in the study. Ninety students were studying for a Masters Degree, while ten students were studying for a doctoral degree in the School of Education at the University of Dar es Salaam.

4.2.2 Department

The respondents were asked to indicate the department with which they are registered in the School of Education at the University of Dar es Salaam. Thirty-five postgraduate students were registered with the Department of Education Psychology and Curriculum Studies (30 Masters Students and 5 Doctoral students), and sixty-five postgraduate students (60 Masters Students and 5 Doctoral students) were registered with the Department of Education Foundation, Management and Lifelong Learning, as shown in Table 2 below.

Table 2: Department with which the postgraduate are registered in the School of Education

Variable	Category	Frequency	Percent
Department	Education Foundation Management and Lifelong Learning	65	65
	Education Psychology and Curriculum Studies	35	35
	Total	100	100

Source: Field data (2014)   N = 100

4.3 Awareness of PERii electronic journal resources by postgraduate students

This part is intended to show if the postgraduate students are aware of PERii electronic journal resources available at the University of Dar es Salaam. When asked if they are aware of PERii electronic journal resources, 95 (95%) declared themselves to be aware of PERii electronic journal resources available at the University of Dar es Salaam, as shown in Table 3, below. This supports the study by Manda (2005:278) who said that the majority of respondents were aware of PERii electronic resources. Awareness of PERii electronic journal resources might have been contributed by promotion and marketing procedures taking place at the University especially by the librarians having this responsibility as part of their job descriptions. Promotion and marketing procedures were also indicated by the study by Rosenberg (2008:30, 71, 102); Harle (2010:25) and Shija (2009) as important approaches for improving the level of awareness of these resources.

Contrary to Shija's study (2009), which discovered that many users are not aware of electronic resource, only five (5%) of respondents claimed not to be aware of PERii electronic

resources; they were excluded from the rest of the questions and returned the questionnaire to the researcher.

Table 3: Awareness of PERii electronic journal resources

Variable	Category	Frequency	Percent
Awareness of PERii electronic journal resources	Yes	95	95
	No	5	5
	Total	100	100

Source: Field data (2014) N = 100

Among all the postgraduate students who responded, all doctoral students (10) involved in the study claimed to be aware of PERii electronic journal resources. For the case of Masters students, 85 Masters students claimed to be aware of the resources, while five Masters students are not aware, as indicated below in Table 4.

Table 4: Description of respondents on awareness of PERii electronic journal resources

Variable	Category	Masters N = 90	PhD N = 10	Percent
Awareness of PERii electronic journal resources	Yes	85	10	95
	No	5	0	5
	Total	90	10	100

Source: Field data (2014) N = 100

Regarding awareness of PERii electronic journal resources, the Reference Librarians were also asked in an interview to indicate if the users of the Library are aware of PERii electronic resources. Their responses are as follows:

One Reference Librarian (hereafter identified as I) claimed that few users are aware of PERii electronic journal resources the reason being due to low evidence of usage from statistics of usage. The statistics of usage for PERii electronic journal resources is low compared to the University registered students, staff and researchers. The response is as follows:

> *Few are aware of PERii electronic journal resources, this can be evidenced by low usage statistics and this information can be obtained from INASP coordinator* (Reference Librarian I).

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Two Reference Librarians (II and III) claimed that some users, notably the postgraduate students, are aware of PERii electronic journal resources. The following are their responses:

Some of them are aware especially postgraduate student; and few undergraduate students are aware. This is because it has not been marketed as it should be, so most of the students are not aware (Reference Librarian II).

Yes, some users are aware of PERi resources, mostly postgraduates (Reference Librarian III).

Two Reference Librarians (V, VI) replied that 'yes' the users including the postgraduate students are aware of the resources, while one Reference librarian (IV) replied that "*some are aware and some are not aware*", the reason being that not all users, including the postgraduate students, access and make use of PERii electronic journal resources.

The comments above from the Reference Librarians indicate that not all the postgraduate students, as well as other users including the undergraduate students, staff and the researchers, are aware of PERii electronic journal resources available; furthermore, low usage statistics of the resources tend to confirm the comments made by the Reference Librarians.

4.3.1 The way postgraduate students became aware of PERii electronic journal resources

In order to be sure that the postgraduate students are aware of PERii electronic journal resources, another important question was posed to the respondents with the intention of ascertaining how they became aware of PERii electronic journal resources. This question was answered by only the 95 respondents who are aware of PERii electronic journal resources; their responses were as shown in Table 5 below. The findings show that the majority of postgraduate students, 77 (81.1%) respondents, became aware of the resources through the Library website. PERii electronic journal databases have been listed on the Library website to help the users who visit it to become aware of their existence and gain access to them from there by clicking on the link of the database the user is interested in. By clicking on the link the user is taken directly to the specific journal database where the user can start browsing for journal articles of interest.

Again, the highest response was 35 (36.8%) respondents who became aware through a librarian. The librarians have been playing a significant role in marketing and promoting the resources to the users through various methods: for example, using the word of mouth during

orientation programme session to newly registered students especially in the beginning of new academic year as well as new users who visit the Library. Also, the librarians have been using word of mouth when conducting various workshops and training of the users regarding the services provided in the Library, including PERii electronic journal resources.

Additionally, 28 (29.5%) respondents became aware through colleagues. The postgraduate students, and other Library users who are aware of PERii electronic journal resources and have been accessing them, have been appreciating the resources and have been commenting on the importance of using these resources to other fellow users.

Moreover, 21 (22.1%) through training (Information Literacy training); 20 (21.1%) through library guides; 19 (20.0%) through the notice board; 13 (13.7%) through their supervisors; 11(11.6%) through brochures; and 10 (10.5%) became aware through fliers and posters as well.

Table 5: The way the postgraduate students become aware of PERii electronic journal resources

Variable	Category	Responses	Percent
The way the postgraduate students become aware of PERii electronic journal resources	Through the Library website	77	81.1
	Through the Notice board	19	20.0
	Through fliers	10	10.5
	Through posters	10	10.5
	Through colleagues	28	29.5
	Through Library training (IL)	21	22.1
	Through Library brochure	11	11.6
	Through Library guide	20	21.1
	Through the librarian	35	36.8
	Through the supervisor (lecturers)	13	13.7

Source: Field data (2014)   N = 95

Note: The respondents were able to give multiple responses.

As Rosenberg (2008:30, 71, 102) and Harle (2010:25) noted, promotion and marketing of the resources is very important and helps to increase awareness by the users: the Library at the University of Dar es Salaam has been playing a significant role in marketing and promoting PERii electronic journal resources. The Library has been using various approaches including advertising them through Library website where the list of PERii journal databases are listed to make the users who visit the Library website became aware of the resources.

The Library is also using guides which are distributed to users. These guides have information of all the services provided in the Library including how to use the Library, how to access printed and electronic resources resources available, how to use the OPAC to locate the resources as well as information about PERii electronic journal resources. Furthermore, brochures with the list of PERii journal databases are prepared and distributed to users who visit the Library.

Apart from that, the librarians themselves have been promoting PERii electronic journal resources through word of mouth: for example, by using various training events and visiting academic departments to talk with the heads of departments about PERii electronic resources and encouraging them to make their members of staff and students aware of the resources, and similar approaches.

Also, the Library has been providing Information Literacy training to Library users including the postgraduate students where, among other events, the users are exposed to the electronic resources particularly PERii electronic journal resources; they are taught how to access and use them, how to evaluate them and make best use of them. Therefore, Information Literacy training is considered essential for all Library users. This was also supported by Kinengyere's (2007:328) study which revealed that Information Literacy is significant as it helps in influencing access and use of electronic resources.

Apart from the responses from the postgraduate students, the interview conducted with the Reference Librarians also confirmed that the Library has been playing a significant role in marketing and promoting PERii electronic resources. The Reference Librarians when asked about which methods are used to bring awareness to Library users responded as follows:

> *"By word of mouth: During training in Information Literacy to postgraduate students and during seminars which are conducted to academic staff;*

marketing through the Library website; and use of brochures available in Library" (Reference Librarian I).

"The resources are advertised on the UDSM Library Website; brochures about PERii resources are printed and distributed to Library users; during Orientation sessions students/Library users are told about PERii resources which are available; and Information Literacy is used to let the Library users know the resources and are taught how to access and use them" (Reference Librarian II).

"Mostly, through IL (Information Literacy) sessions and sometimes through fliers. Also the Library website has information about the resources that users can read about" (Reference Librarian III).

"Through Library website and notice board as well as during orientation programme" (Reference Librarian IV).

"They are informed during orientation week programme" (Reference Librarian V).

"They are informed through Brochures, training, and display through notice board" (Reference Librarian VI).

Regarding how they promote the resources, the Reference Librarians commented that they promote the resources using the Library website as the resources are listed there; they use fliers, word of mouth, orientation sessions, brochures as well as using various exhibitions where information about PERii electronic journal resources is displayed and they are introduced to the users. The following are summary comments from the Reference Librarians.

"Orientation and IL training and brochures and Library web" (Reference Librarian I).

"Mostly through IL sessions and fliers. The Library website has information about these resources. Sometimes promotion is done by a word of mouth to walking in users or during Sabasaba and TCU exhibitions" (Reference Librarian III)

The researcher also wanted to know the approaches that are used in promoting PERii electronic journal resources and the answers from the Reference Librarians were as follows: Reference Librarian (I) replied that they use "*Printed brochures and word of mouth, when users visit the Library physically*". Reference Librarian (II) replied that they use "*printed brochures and Library website*" and Reference Librarian (III) replied that they use "*IL training, Library website, fliers and word of mouth, as well as Sabasaba and TCU exhibitions*".

From the comments above, it is evident that the Librarians have been marketing and promoting PERii electronic journal resources using the Library websites, word of mouth, Information Literacy training, brochures, library guides, notice boards and fliers. The comments reveal that the Library has been playing a significant role in marketing and promoting PERii electronic journal resources using various methods which have contributed in increasing awareness of PERii electronic journal resources at the University of Dar es Salaam.

4.3.2   Training on access and use of PERii electronic journal resources

The respondents were asked to indicate if they have ever received any training concerning the access and use of PERii electronic journal resources. The findings in Table 6 below shows that only 29 (30.5%) respondents received training on how to access and use PERii electronic journal resources, while the majority, 66 (69.5%), have never received training on the same.

Table 6: Training on access and use of PERii electronic journal resources

Variable	Category	Frequency	Percent
Training on access and use of PERii electronic journal resources	Yes	29	30.5
	No	66	69.5
	Total	95	100

Source: Field data (2014)   N = 95

The findings above show that the majority of the respondents have never received training despite the fact that the Library has been providing Information Literacy (IL) training. This may be due to the fact that the majority of students are reluctant to attend to these training sessions. The statistics obtained from the Library shows that the number of students who register for this training is always high but the attendance during the training session is always very low. The training is also always provided free of charge to Library users; the students are reluctant to attend because they are not paying anything thinking that it is just routine Library training which will not add anything to their studies. Moreover, the training is not integrated in the curriculum. The study by Kinengyere (2007:339) indicated that if IL is integrated into the University curriculum this yields good results and makes the students as well as researchers information literate. Gakibayo, Ikoja-Odongo and Okello-Obura (2013:17, 18)

argue that Information Literacy skills helps to increase e-resources utilization and therefore it should be embedded in the curriculum. Integration of IL into the University curriculum will help to equip students to become familiar with the access of electronic resources.

In contrary to the findings above, the Reference Librarian when interviewed and asked whether they provide any training regarding access and use of PERii electronic journal resources they responded that training is provided to Library users including postgraduate students through IL training as well as orientation sessions where users are introduced to the resources and are taught how to access and use them. The following were their responses:

Four Reference Librarians (II, III, IV, VI) replied that training is provided "*through Information Literacy training*"; while one Reference Librarian (I) replied that the training is provided through *orientation and IL training*" and another Reference Librarian (V) replied that the training is provided through "*Orientation programmes*".

Moreover, the researcher wanted to know if the training is important to the users and if it has any impact on regarding the access and use of PERii electronic journal resources. The Reference Librarians who answered this question said that training is very important to Library users; they commented as follows:

> *"Yes, since most of them are novice in using computers to access scientific information and majority of them have fragile IL skills"* (Reference Librarian I).

> *"Yes*: *Training help them to know the existence of PERii resources, how to access them and use them; Library users are provided with the skills on how to access them"* (Reference Librarian II).

> *"Training is very important as it keeps users abreast with the available resources"* (Reference Librarian III).

> *"Training is important because through training users learn different methods on how to search, evaluate and site electronic journals"* (Reference Librarian VI).

The findings above support that training on how to access and use PERii electronic journal resources is very important because it helps to know the existence of the resources and equips students with necessary skills needed for accessing and using the resources. The fact that the number who did not receive training is high might be due to the reason that the students missed the IL trainings as well as orientation sessions.

4.4 Access to PERii electronic journal resources by the postgraduate students

This part explores if the postgraduate students have access to PERii electronic journal resources. Only 95 respondents who are aware of PERii electronic journal resources responded to this question, and the results shows that majority of respondents [91 (95.8%)] use PERii electronic journal resources as indicated in Table 7 below. The majority of respondents access PERii electronic journal resources because they are aware of their existence.

Four (4.2%) respondents said "no" they don't access PERii electronic journal resources as shown in Table 7 below. In their case, they were then invited to focus on questions probing the challenges encountered in accessing and using the resources as well as providing opinions on what should be done to improve access and use of PERii electronic journal resources.

Table 7: Access to PERii electronic journal resources

Variable	Category	Frequency	Percent
Access to PERii electronic journal resources	Yes	91	95.8
	No	4	4.2
	Total	95	100

Source: Field data (2014)   N = 95

Among 95 postgraduate students who are aware of postgraduate students, 82 Masters students access PERii electronic journal resources as well as nine doctoral students. Three Masters students and one doctoral students do not access PERii electronic journal resources as shown in Table 8 below.

Table 8: Description of respondents on access to PERii electronic journal resources

Variable	Category	Masters N = 90	PhD N = 10	Percent
Access to PERii electronic journal resources	Yes	82	9	91
	No	3	1	4
	Total	85	10	95

Source: Field data (2014)   N = 95

4.4.1 Methods used in searching for PERii electronic journal resources

The respondents were further asked to indicate the methods they are using in searching for PERii electronic journal resources. Keyword searching of electronic journal database was the popular method used by respondents, followed by author searching from the electronic journal database; truncation, and Boolean operators were also used, as indicated in Table 9 below.

The majority of respondents prefer using keyword searching of electronic journals from journal databases. This is shown in Table 9 where 57 (62.6%) respondents selected the use of keyword searching when accessing PERii electronic journal resources from PERii electronic journal database. This may be due to the fact that most of them do not know the authors of the articles for which they are searching; instead, they use keywords related to the topics of their search and retrieve the articles which can best meet their information needs.

Another leading method is author searching from the electronic journal databases whereby 37 (40.7%) respondents claimed to use author search when accessing PERii electronic journal resources. This might be due to the fact that those who search using the author search know the authors of the articles for which they are searching.

Table 9: Methods used in searching for PERii electronic journal resources

Variable	Category	Responses	Percent
Methods used in searching for PERii electronic journal resources	Keyword searching of electronic journal databases	57	62.6
	Author searching from the electronic journal databases	37	40.7
	Truncation	15	16.5
	Boolean operators	2	2.2

Source: Field data (2014)   N = 91

Note: The respondents could provide multiple responses

Fifteen (16.5%) respondents use truncation and two (2.2%) respondents use Boolean operators. Truncation and Boolean operators received few responses because the majority of the respondents might not know how to use them, especially if they had never attended Information Literacy training in which searching using truncation and Boolean operators is also taught.

The findings above reveal that the most used method in searching for PERii electronic journal resources is keyword searching, followed by author searching, truncation and Boolean operators respectively.

4.4.2 Popular tools used by postgraduate students in searching for PERii electronic journal resources

The respondents were asked to indicate the tools they are using in searching for PERii electronic journal resources. The most popular tool used by respondents in searching for PERii electronic journal resources was use of a search engine. This supports Ahmed's findings (2013b:294) who also found that the most popular tool used was a search engine. The next most popular tool used is the Library website, while the least popular are databases with full-text journals when accessing PERii electronic journal resources, as shown in Figure 1.

The findings in Figure 1 below show that 63 (69.2%) respondents use search engines to access PERii electronic journal resources. A search engine is seen as the easiest approach by the majority of postgraduate students when accessing PERii electronic journal resources. This is because most of the users prefer using search engines -- for example 'Google' -- to search for electronic resources than going directly to search on PERii journal databases or using websites.

Again, the frequency is high for using the Library website to access PERii electronic resources, as 55 (60.4%) respondents claimed to use the Library website. It is always easier to access PERii electronic journal resources from the Library website as it requires someone to follow the link of the database by clicking on it; this act will take someone into the journal database where he/she can search for electronic resources of his/her interest.

Few [27 (29.7%)] of the respondents indicated use of the database with full-text journals when searching for PERii electronic journal databases. This might be due to the reason that the majority of users do not know the list of names of PERii electronic journal databases, instead preferring to use other means of searching to meet their information needs.

The above findings reveal that the most popular tool preferred by postgraduate students is the search engine, then the Library website and the least preferred is the journal database with full-text journal articles.

Figure 1: Popular tools used in searching PERii electronic journal resources
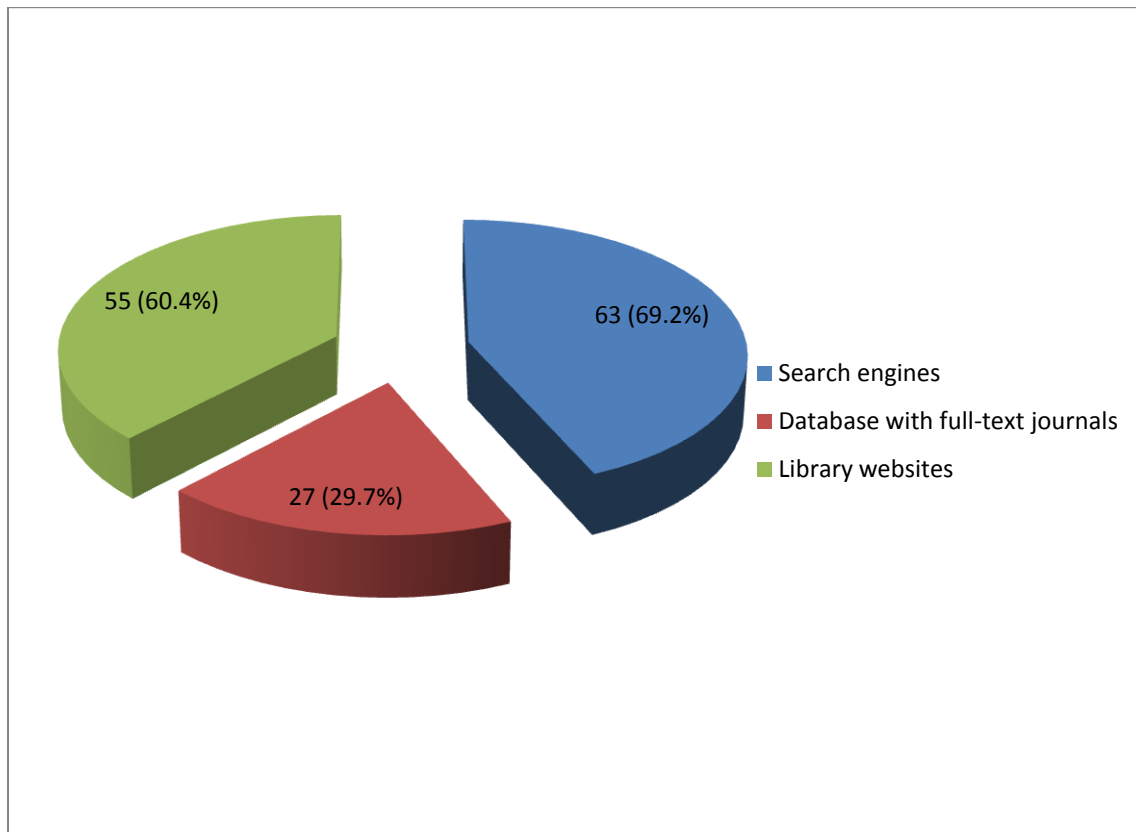
Note: The respondents could make multiple choices of the popular tools used; for this reason, the percentages displayed do not total 100%.

4.4.3   The place where PERii electronic journal resources are accessed from

The respondents were asked also to indicate the place or location where they access PERii electronic journal resources. The findings shows that 69 (75.8%) respondents access PERii electronic journal resources in the Library; 35 (38.5%) respondents access PERii electronic journal resources in a computer lab; 26 (28.6%) respondents access PERii electronic journal resources in the classrooms; 15 (16.5%) respondents access PERii electronic journal resources in their hostel; and 17 (18.7%) respondents access PERii electronic journal resources in the Internet café as shown in Table 10 below.

Table 10: The place where PERii electronic journal resources are accessed from

Variable	Category	Responses	Percent
The place where PERii electronic journal resources are accessed from	In the Library	69	75.8
	In a computer lab	35	38.5
	In a hostel	15	16.5
	In the class room	26	28.6
	In the Internet Cafe	17	18.7

Source: Field data (2014)   N = 91

Note: The respondents could make multiple responses

The Library is the principal place where postgraduate students access PERii electronic journal resources. This may be due to the fact that the Library, as the coordinator for INASP-PERii in Tanzania, is the pioneer in marketing and promoting the access and use of PERii electronic resources at the University of Dar es Salaam. Moreover, the Library has a number of computers connected with internet in the Reference and Documentary Delivery Section for students to use for free of charge. Therefore, it is the best place for most of the students to access PERii electronic journal resources.

However, PERii electronic journal resources are accessed also from other places, for example in a computer lab. The computer labs always help the students who do not own personal laptops to access the resources at the University. Also, the computer labs are always connected with internet services to allow access of PERii electronic resources.

Apart from that, PERii electronic journal resources are accessed from the hostels of the University of Dar es Salaam. The University has a number of hostels located in various areas: for example Mabibo Hostel, Kunduchi Hostel, and Kijitonyama hostel. The hostels have been connected with the University internet and wireless which enable students living in the hostels to access electronic resources.

Moreover, PERii electronic journal resources are accessed from the classrooms at the University of Dar es Salaam. This is because the classrooms have been connected with internet cables and also wireless internet is available to enable access of electronic resources.

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Therefore, some students prefer accessing PERii electronic journal resources when they are in the classrooms, just as seen above in Table 10.

Only a few respondents indicated that they gain access to PERii electronic journal resources when they are in an Internet café. This is because very few articles can be retrieved when someone is in an Internet café as it is outside the IP range of the network of the University. It must be remembered that in order to access PERii electronic journal resources someone must be in the University compound. Therefore, those who are accessing PERii electronic journal resources from an Internet café might be subscribing to some journal databases to retrieve some articles.

The findings have revealed that PERii electronic journals have been accessed from various places including the UDSM Library, computer labs available at the University of Dar es Salaam, hostels, in the classrooms, and the internet café.

4.4.4   Reasons for accessing PERii electronic journal resources

The respondents were asked to indicate the reasons for accessing PERii electronic journal resources. Similar to other studies, for example the study by Ahmed (2013b:297), the respondents indicated the reasons for accessing PERii electronic journal resources to be because they are reliable and up-to-date resources; they are easily accessed anytime anywhere; they are available free of charge; they can be downloaded and stored; and they can be printed, as indicated in Table 11 below.

The findings below show that 52 (57.1%) respondents said PERii electronic journal resources are reliable and up-to-date resources. This is true because most recent published articles can be accessed and retrieved from journal databases under the PERii programme.

Also, 48 (52.7%) respondents said the resources are easily accessed at anytime, anywhere. This is due to the reason that the subscription paid by the University for PERii electronic journal resources gives users the right to access them wherever they are in the University compound; be it in the Library, hostel, classroom or elsewhere within the IP range of the network of the University compound.

Again, 41 (45.1%) respondents said the reason for preference was the free availability of PERii electronic journal resources. This is because the students are able to access the resources without payment cost when accessing the resources at the University of Dar es Salaam; unlike other electronic resources where the users are required to pay a subscription fee to access and retrieve them.

Moreover, 37 (40.7%) respondents said that they access PERii electronic resources because the resources can be downloaded and stored. PERii electronic journal resources like other resources can be downloaded and stored to personal computers or laptops where one can decide to use later, even outside the University compound.

Another reason for accessing PERii electronic journal resources is that the resources can be printed: this was reported by 24 (26.4%) respondents. It is possible to print the electronic articles retrieved and have a copy which can be used later, even outside the University compound, especially for those users who do not like reading text through their computers.

Table 11: Reasons for accessing PERii electronic journal resources

Variable	Category	Responses	Percent
Reasons for accessing PERii electronic journal resources	They are reliable and up to date resources	52	57.1
	They are easily accessed at anytime, anywhere	48	52.7
	Free availability	41	45.1
	They can be downloaded and stored	37	40.7
	They can be printed	24	26.4

Source: Field data (2014)   N = 91

Note: The respondents could make multiple responses

The findings above reveal that PERii electronic journal resources are very important to the postgraduate students and have a lot of advantages.

4.4.5   ICT device used to access PERii electronic journal resources

The respondents were further asked to indicate the ICT devices which are used to access PERii electronic journal resources. The findings in Table 12 below show that the majority of

respondents, that is 69 (75.8%) respondents, use computers in the Library. This is because the Library has computers for students to use free of charge when accessing electronic resources. The computers are located in the Reference and Documentary Delivery Section. Also, students prefer to come to use computers in the Library because the internet is available and in the case of the power outage, the Library has a standby generator to provide power.

Other leading ICT devices used are personal laptops: 43 (47.3%) respondents uses these to access PERii electronic journal resources. The response is also high because most of students today especially the postgraduate students, possess their own personal laptops. Therefore, it becomes easier to use them to access PERii electronic journal resources wherever they are in the University compound as long as they are connected to the University internet.

Moreover, 38 (41.8%) respondents use computers in a computer laboratory to access PERii electronic journal resources. The computer labs are always connected with the University internet and in most cases are used by the students who do not own their own personal laptops, although others students with laptops may still use them as well.

Also, a few respondents claimed to use other portable ICT devices to access PERii electronic journal resources. The findings in table 10 indicate that 18 (19.8%) respondents use their smartphones; 17 (18.7%) respondents use a personal iPad; and 6 (6.6%) respondents use Tablet devices to access PERii electronic journal resources. This may be another advantage brought by the development of ICT as information is found and retrieved right on the hand.

Table 12: Devices used to access PERii electronic journal resources

Variable	Category	Responses	Percent
Devices used to access PERii electronic journal resources	Computers in the Library	69	75.8
	Computers in a computer lab	38	41.8
	Personal laptop	43	47.3
	Personal smartphone	18	19.8
	Personal iPad	17	18.7
	Personal Tablet	6	6.6

Source: Field data (2014)   N = 91

Note: The respondents could make multiple responses

The findings above confirm that the greater availability of computers and other ICT devices has increased the level of access to PERii electronic journal resources, a finding also pointed-out in the study by Manda (2005:274) and Ahmed (2013b:304).

4.4.6   Reasons for not accessing PERii electronic journal resources

Those who do not access PERii electronic resources were asked to indicate the reasons for not accessing them. The respondents stated that they are discouraged from using PERii electronic journal resources due to some challenges, including unreliable internet connectivity, power outage, difficult in accessing them and lack of awareness on how to access PERii electronic journal resources, as shown in Table 13 below.

The findings in Table 13 show that three (75%) respondent claimed that difficulties are due to unreliable internet connectivity. This is a serious challenge at the University of Dar es Salaam because there is always unstable internet connectivity.

Three (75%) respondents claimed that it is due to the many power-cuts. This is another very serious problem facing the University of Dar es Salaam. There is always a high frequency of power-cuts which discourages the access of electronic resources.

Also, two (50%) respondents argued that they always face difficulty in accessing PERii electronic journal resources and another two (50%) respondents argued that it is due to lack of awareness of PERii electronic journal resources as shown in Table 13 below.

Table 13: Reasons for not accessing PERii electronic journal resources

Variable	Category	Responses	Percent
Reasons for not accessing PERii electronic journal resources	Unreliable internet connectivity	3	75
	numerous power-cut	3	75
	Lack of awareness of PERii resources	2	50
	Always I face difficulty in accessing them	2	50

Source: Field data (2014)   N = 4

Note: The respondents could make multiple responses

4.5 Use of PERii electronic journal resources by postgraduate students

This part is intended to indicate how the postgraduate students make use of PERii electronic journal resources available at the University of Dar es Salaam, by stating the purpose of using PERii electronic journal resources; frequency of use; perceived usefulness; and the perceived relevance of PERii electronic journal resources.

4.5.1   Purposes of using PERii electronic journal resources

The postgraduate students nominated various purposes for using PERii electronic journal resources including working on the assignments, working on the dissertation/thesis, working on research proposal writing and report writing, for leisure, and current awareness and for extra exploration of ongoing scientific debates through peer-reviewed papers, as shown in Table 14 below.

Table 14 shows that 63 (69.2%) of respondents use PERii electronic journal resources to work on their assignment as the first reason for using the resources, this being the highest response. It should be remembered that most of respondents are Masters students, who study by coursework. Therefore, they have been using PERii electronic journal resources to work on their assignments.

Again, the use of PERii electronic journal resources to work on a dissertation/thesis is popular, as it was reported by 54 (59.3%) respondents. This is because the postgraduate students, particularly the Masters students, have to develop their dissertations after completing the coursework in order to complete their degree programme. Likewise, the Doctoral students are required to develop their thesis, and therefore, they have been using PERii electronic journal resources to work on their thesis.

Also, 35 (38.5%) respondents use PERii electronic journal resources for literature purposes. PERii electronic journal resources have been used by postgraduate students at different stages when developing their dissertation/thesis, including the stage of proposal writing [32 (35.2%)]; literature review writing and report review writing [29 (31.9%)], just as shown in Table 14 below.

Apart from that 21 (23.1%) respondents use PERii electronic journal resources for current awareness; and 6 (6.6%) respondents responded that they use PERii electronic journal

resources for leisure. The response for this is very low perhaps because most people in Tanzania do not have a 'reading culture'. Postgraduate students tend to read when there is reason for doing so, which may be due to the given assignment, or working on something important -- in most cases academic work, for example studies, or working on the dissertation/thesis.

However, very few people have that desire to read electronic journals for purposes other than direct study: for example one (1.1%) respondent stated that PERii electronic journal resources are used for extra exploration of ongoing scientific debates through peer-reviewed papers.

Table 14: Purposes of using PERii electronic journal resources

Variable	Category	Responses	Percent
Purposes of using PERii electronic journal resources	Working on the assignments	63	69.2
	For working on dissertation/thesis	54	59.3
	For literature purpose	35	38.5
	For research proposal writing	32	35.2
	For research report writing	29	31.9
	For current awareness	21	23.1
	For leisure	6	6.6
	For extra exploration of ongoing scientific debates through peer-reviewed papers	1	1.1

Source: Field data (2014)   N = 91

Note: The respondents could make multiple responses

Apart from the postgraduate students, the researcher wanted to know the perceived uses of PERii electronic journal resources from the Reference Librarians. The Reference Librarians reported that PERii electronic journal resources are used for research purposes including proposal writing, literature review and report writing; working on assignments; preparing teaching materials; and for reference purposes. This is revealed through the following comments:

> *"The resources are used for research and assignment purpose"* (Reference Librarian I).

> *"Research: It helps the students for example when they are writing their Proposals and literature review. Also, they help the students when they are working on their assignments because the Library doesn't have enough materials, so the resources supplement other materials and the fact that they resources are current, they are so useful. Moreover, the resources help in scholarly academic works for example, lecturers preparing their lectures/teaching materials"* (Reference Librarian II).

> *"In many cases the resources are used for research purpose to Postgraduate students and sometimes undergraduates but also as sources for classroom exercises. In some cases researchers use these resources for reference purposes"* (Reference Librarian III).

Generally, it was evident that the first reason for using PERii electronic journal resources is working on assignments. Other reasons are for research purpose, for current awareness, for leisure and for exploration of ongoing scientific debates in peer reviewed papers.

4.5.2 Frequency of use of PERii electronic journal resources

The question was asked to respondents with the intention to ascertain how often the postgraduate students use PERii electronic journal resources. The findings depicted in Figure 2 show that 30 (33.0%) use PERii electronic journal resources daily; 36 (39.6%) respondents use PERii electronic journal resources weekly; 24 (26.4%) respondents use PERii electronic journal resources monthly; and 1 (1.1%) respondent use PERii electronic journal resources yearly.

Figure 2: Frequency of use PERii electronic journal resources
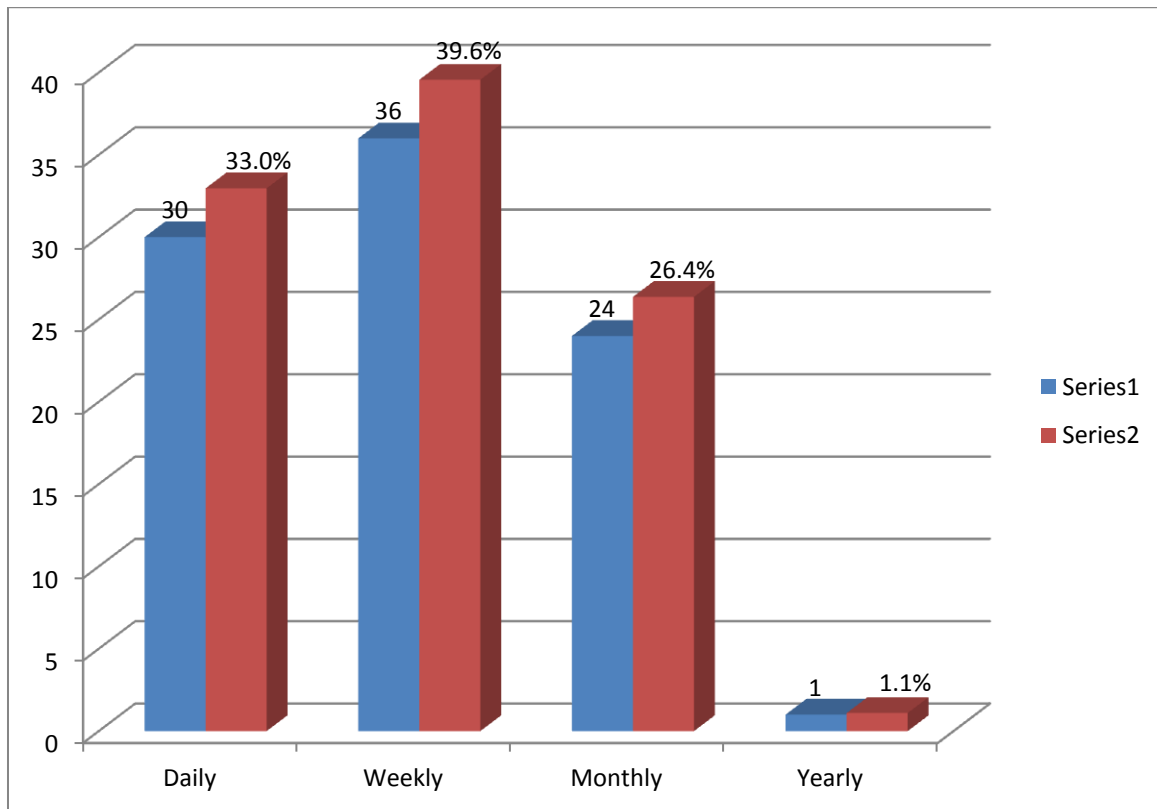
Series 1 is number of respondents

Series 2 is percentage of respondents

Source: Field data (2014)   N = 91

The findings above show that the majority of postgraduate students use PERii electronic journal resources weekly, daily or monthly. This reveals that PERii electronic journal resources are very important and are widely used by postgraduate students for different purposes. Only one respondent responded to use PERii electronic journal resources once in a year.

4.5.3   Perceived usefulness of PERii electronic journal resources

Another important question was asked to the respondents with the intention of ascertaining the perceived usefulness of PERii electronic journal resources. The findings in Figure 3 show that 32 (35.2%) respondents responded that PERii electronic journal resources are very useful; 45 (49.5%) respondents responded that PERii electronic journal resources are useful; and 14 (15.4%) respondents responded that PERii electronic journal resources are somewhat useful. None of the respondents responded that the resources are not useful.

Figure 3: Perceived usefulness of PERii electronic journal resources
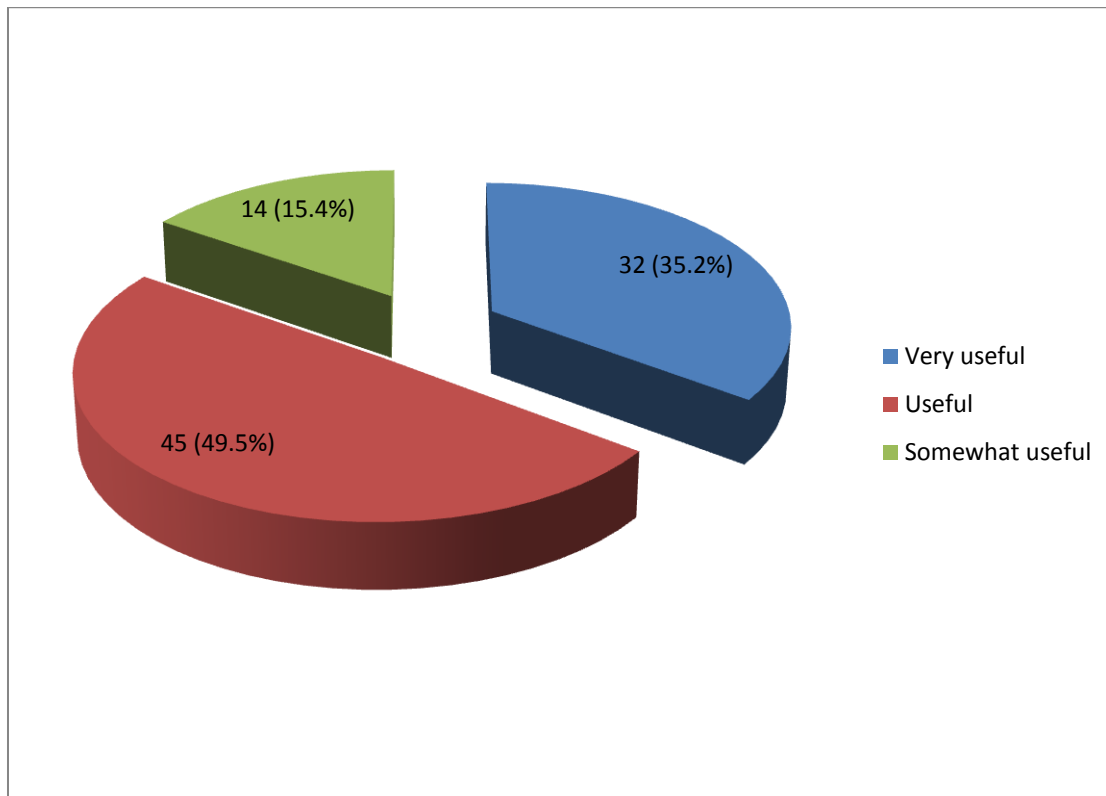
Source: Field data (2014)   N = 91

The findings above reveal that PERii electronic journal resources are important and useful to the majority of the postgraduate students, followed with those who responded that the resources are very useful. Only a few of the respondents [14 (15.4%)] responded that the resources are somewhat useful, which might be due to the reason of failing to locate the resources they want. None of the respondents claimed that the resources are not useful.

4.5.4 Perceived relevance of PERii electronic journal resources

The respondents were asked also to indicate the relevance of PERii electronic journal resources. The respondents responded positively as to the relevance of PERii electronic journal resources. For example, 51 (56.0%) respondents responded that PERii electronic journal resources are relevant; 28 (30.8%) respondents responded that PERii electronic journal resources are most relevant; and 12 (13.2%) respondents responded that PERii electronic journal resources are somewhat relevant, as shown in Figure 4 below. None of the respondents regarded PERii resources as irrelevant resources.

Figure 4: Perceived relevance of PERii electronic journal resources
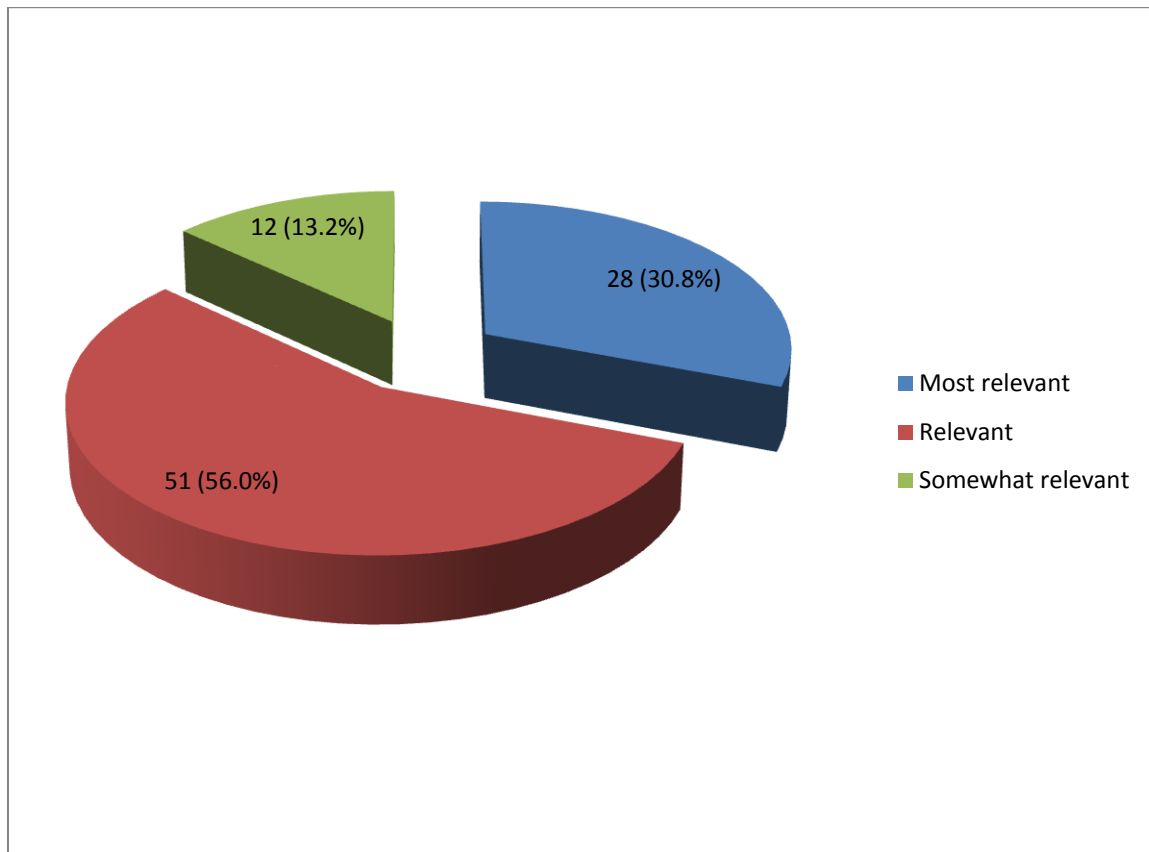
Source: Field data (2014)   N = 91

4.5.5   Reasons for not using PERii electronic journal resources

The question was asked to those who do not use PERii electronic journal resources to ascertain their reasons for not using the resources. The findings show that three (75%) respondents do not use PERii electronic journal resources because they prefer using printed resources rather than electronic journal resources; four (100%) respondents responded that they don't know how to access PERii electronic journal resources; while one (25%) respondent responded that he/she always face difficulty in accessing PERii electronic journal resources, as shown in Figure 5 below.

Figure 5: Reasons for not using PERii electronic journal resources
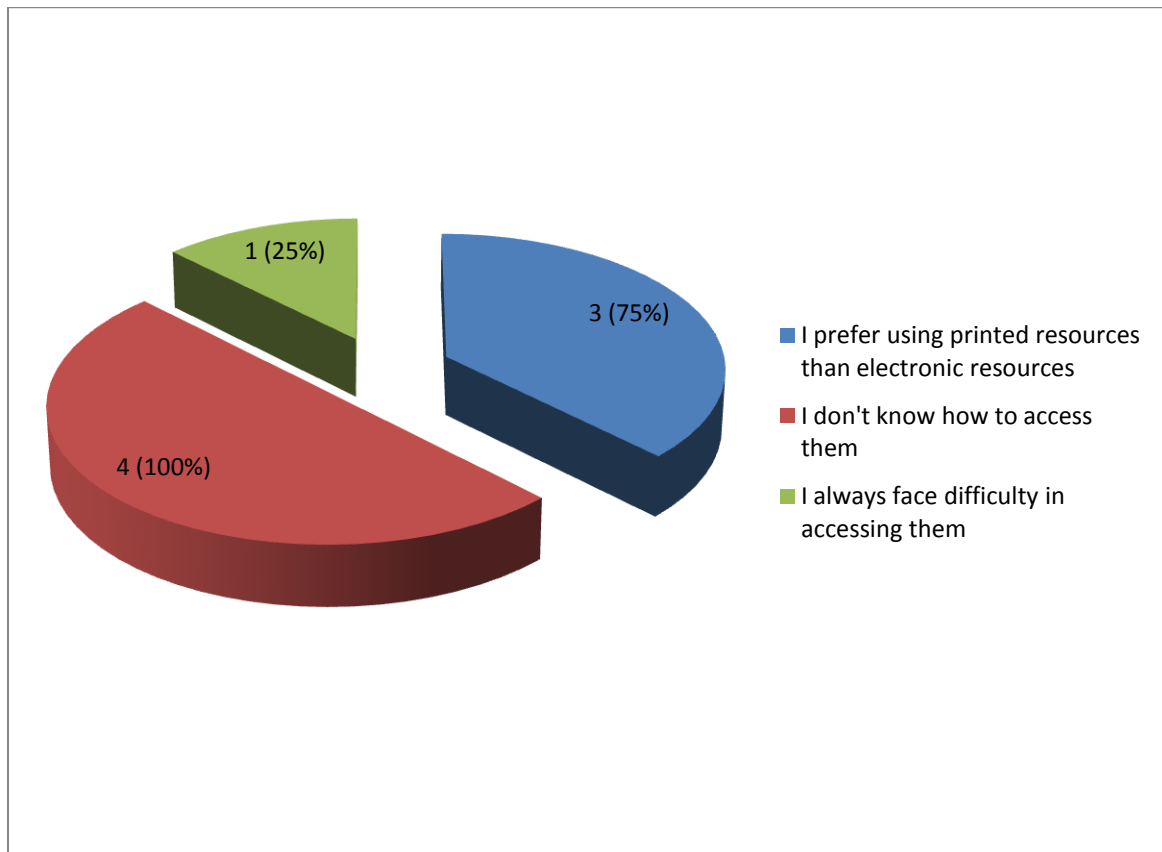
Source: Field data (2014)   N = 4

Note: The respondents could make multiple responses for reasons of not using PERii electronic journal resources

The findings above indicate that there are still some postgraduate students who prefer to use printed resources rather than electronic journal resources. However, the findings above show that some of the postgraduate students do not use PERii electronic journal resources because they don't know how to access the resources although they know of their existence. Also, some face difficulty in accessing them. This might be due to the fact that they have never attended training on how to access and use PERii electronic journal resources, including Information Literacy training in which users are taught how to access, retrieve, evaluate and use of electronic resources including PERii electronic journal resources. Therefore, training is needed to equip them to use the resources.

4.6 Challenges encountered in accessing and using PERii electronic journal resources

The question was posed to respondents to explore the challenges encountered when accessing and using PERii electronic journal resources. This question was answered by all the

respondents who are aware of PERii electronic journal resources. A number of challenges including power outage, inadequate bandwidth, limited access to computers, slow download speed, inability to access the resources from home, lack of awareness and difficulty in making a search were mentioned, in confirmation of previous studies conducted by Manda (2005:280), Ahmed (2013a:8), Rosenberg (2008:56), Agber and Agwu (2013:274) and Shija (2009).

The findings in Table 15 below show that 64 (67.4%) respondents reported the challenge of power outage. Power outage is the challenge which has been mentioned most often by the respondents. Power outage is a serious problem not only at the University of Dar es Salaam but for the whole country of Tanzania; there are frequent power outages.

Also, 51 (53.7%) respondents nominated the challenge of inadequate bandwidth, as shown in Table 15 below. This is another serious challenge encountered in the access and usage of PERii electronic journal resources. Moreover, 48 (50.5%) respondents reported the challenge of slow download speed. Inadequate bandwidth often leads to unavailability of internet connectivity and slow download speed as well. This finding is also supported by Shija's study where it is argued that unreliable power supply and inadequate bandwidth have been contributing to poor internet connectivity which often leads to failure to access electronic journal resources.

Forty-seven (49.5%) respondents reported the challenge of inability to access electronic journal resources from home as shown in Table 15 below. This is another important challenge mentioned by several respondents. It is a challenge because PERii electronic journal resources are accessed within the IP range of the University of Dar es Salaam, therefore it is not possible to access the resources when someone is outside the IP range of the University network. In other words, PERii electronic journal resources are accessed when someone is in the University campuses. Most of the users fail to satisfy their information needs when they are outside the University.

Again, 42 (44.2%) respondents reported the challenge of limited computers as shown in Table 15 below. This is true because the number of computers available at the University particularly in the Library and computer labs is too small compared with the number of students enrolled at the University. This has forced the students to share the few computers

available whereby, for example in the Library, the students may use a computer for only a half an hour and must leave the computer for others to use unless there are no other students in the queue.

Additionally, 37 (38.9%) respondents reported the challenge of lack of awareness on how to access PERii electronic journal resources as shown in Table 15 below. Although most of the respondents are aware of PERii electronic journal resources at the University, it seems there is lack of awareness on how to access them. It might be due to lack of training on how to access the resources.

Also, 29 (30.5%) respondents reported difficulty of finding relevant information, as shown in Table 15 below. This might be due to the reasons that they fail to get materials related to their studies in the listed PERii electronic journal databases.

Furthermore, 17 (17.9%) respondents reported that they find making a search difficult, as shown in Table 15 below. It might be because the lack of training on how to access PERii electronic journal resources as it was discussed earlier.

Table 15: Challenges encountered in accessing and using PERii electronic journal resources

Variable	Category	Responses	Percent
Challenges encountered in accessing and using PERii electronic journal resources	Power outage	64	67.4
	Inadequate bandwidth	51	53.7
	Limited access to computers	42	44.2
	Slow download speed	48	50.5
	Inability to access electronic journals from home	47	49.5
	Difficulty to find relevant information	29	30.5
	Lack of awareness	37	38.9
	I find making a search difficult	17	17.9

Source: Field data (2014) N = 95

Note: The respondents could choose multiple responses

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On other hand the Reference Librarians were asked to indicate the challenges that they are facing regarding provision of services of PERii electronic journal resources. They said they are facing a number of challenges including insufficient ICT infrastructure; power outage; providing user education to most of users; complaints of the users that some of the resources are not relevant; inadequate bandwidth; the lack of access to resources outside the University; complaints from the users that some resources fail to open; insufficient funding and so on. This is revealed through their comments provided during interviews as follows:

> *"The challenges are ICT infrastructures and Power failure"* (Reference Librarian I).

> *"ICT infrastructure - We have few computers while the users are many, the computers are not enough; poor marketing of the resource; Lack of fund and leadership to market the resources properly; Staff are not very well committed on marketing the resources and training the users; and User education is also a challenge because a lot of Library users don't know how to access and use them"* (Reference Librarian II).

> *"Some users complain about some resources not being relevant to them. Also slow bandwidth hamper smooth access to resources. In addition these resources can only be accessed from within campus, hence narrowing access to users off campus"* (Reference Librarian III).

> *"Users are given limited time to access PERii resources when using computers in the Library; the challenge of power supply; and low bandwidth"* (Reference Librarian IV).

> *"When the brochure gets lost it becomes so expensive to provide new ones. Some users are not comfortable reading from the screen they prefer to use hard copy. Some users complain that the resources don't open even if you type the correct URLS when you are at other premises away from University of Dar es Salaam"* (Reference Librarian V).

> *"Insufficient Fund to pay for subscription via COTUL or direct to the Publisher as the cost for purchasing electronic journals are very expensive. Selecting of electronic journal sometimes depend on the amount of money we have rather than the user's need. Insufficient fund for conducting training and workshop regarding access and use of the resources"* (Reference Librarian VI).

Moreover, the researcher wanted to know what efforts have been made so far to overcome the indicated challenges. The answer to this question was as follows: Reference Librarian (I) replied that they have been *"using few resources available such computers in the reference section as well as encouraging users to use their ICT facilities"*.

Reference Librarian (II) answered that "*we have been doing more orientation programs and Information literacy training to train users. Also we are planning to use online orientation programmes and Information Literacy which we think will help*".

Reference Librarian (III) replied that they are "*trying to indicate to users alternative resource relevant to their needs. Also, we recommend to users to access these resources in the morning when it is not peak hours. Users are advised to access other free resources in case they fail to access the ones on campus while outside*".

Reference Librarian (IV) stated that it is through "*provision of training on how to use PERii resources*"; while Reference Librarian (VI) said that the "*Library is searching for fund from other sources for example INASP to subscribe for electronic journals rather than depending on the small fund from the University of Dar es Salaam*".

The comments above, as well as the findings, shows that the challenges hindering access and use of PERii electronic journal resources include power outage, inadequate bandwidth, limited access to computers, slow download speed, inability to access electronic journal resources from home, difficulty to find relevant information, lack of awareness and difficulty in making a search.

4.7 Ways to improve access and use of PERii electronic journal resources by postgraduate students

The respondents were asked to point out their opinion on what should be done to improve access and use of PERii electronic journal resources. Only 78 respondents attempted this question and their opinions include that PERii electronic journal resources should be advertised on the University notice boards; awareness of PERii resources should be promulgated more intensively to students and researchers; it must be a national priority that every institution should subscribe to PERii resources; there should be well established centers to boost awareness of PERii resources country wide; access to PERii should also be available outside the University through provision of passwords so that *bona fide* students can access them from home; adequate bandwidth should be procured; training on how to access and use PERii electronic resources should be improved; download speed should be improved; improved availability of PERii electronic journal resources; ensure stable and reliable power;

improve ICT infrastructure to support access and use of PERii electronic journal resources; and ensure relevant information is provided.

The findings in Table 16 show that 41 (52.6%) respondents stated that training on how to access and use PERii electronic journal resources should be provided. Training such as, for example, Information Literacy training helps the users to know what resources are available, how to access them, how to retrieve them, how to evaluate the retrieved resources, and make use of the resources as it was discussed earlier.

Twenty eight respondents [28 (35.9%)] argued that ICT infrastructure should be improved to support access and use of PERii electronic journal resources. As has been discussed earlier ICT infrastructure such as computers should be improved to support access and use of PERii electronic resources in the Library as well as computer labs to serve the growing number of students at the University. The Library should seek for funds to buy other ICT tools such as iPad for example, and let the users borrow and use them to access PERii electronic journal resources.

Again, 26 (33.3%) respondents argued that the University should ensure there is stable and reliable power. This may be done probably by purchasing heavy duty standby generators which will be used to provide power when there is the problem of power outage.

Moreover, 24 (30.8%) respondents said that awareness of how to access PERii resources among students and researchers should be increased. Although, the Library is marketing and promoting the resources, and efforts are needed to make sure training on how to access the resources are given in order to increase awareness on how to access them.

Twenty two [22 (28.2%)] respondents argued that the University should ensure there is adequate bandwidth. Adequate bandwidth will help to provide reliable internet connectivity which will support access to PERii electronic resources.

Furthermore, 17 (21.8%) respondents said that access to PERii should also be available outside the University to *bona fide* students and researchers, through provision of passwords. This will help the users to access the resources even when they are at home.

Additionally, five (6.4%) respondents argued that downloading speed should be increased; two (2.6%) respondents replied that the availability of PERii electronic journal resources should be improved; one (1.3%) respondent argued that PERii electronic journal resources should be advertised on the University notice boards; another one respondent argued that it must be a national priority that every institution should subscribe to PERii resources, while another respondent said that there should be well established centres to boost awareness of PERii resources country wide as shown in Table 16 below.

Table 16: Ways to improve access and use of PERii electronic journal resources by postgraduate students

Category	Responses	Percent
Advertise PERii resources on the University notice board	1	1.3
Increase awareness of PERii resources to students and researchers	24	30.8
It must be a national priority that every institution should subscribe to PERii resources	1	1.3
There should be well established centers to boost awareness of PERii resources country wide	1	1.3
Access to PERii should also be available outside the University through provision of password so that those who are bona fide students and researchers can access them from home	17	21.8
Ensure adequate bandwidth	22	28.2
Training on how to access and use PERii electronic resources should be provided	41	52.6
Increase download speed	5	6.4
Improve availability of PERii electronic journal resources	2	2.6
Ensure stable and reliable power	26	33.3
Improve ICT infrastructure to support access and use of PERii electronic journal resources	28	35.9
There should be Relevant information	2	2.6

Source: Field data (2014)   N = 78

Note: The respondents could choose multiple responses

The above findings point out that PERii electronic journal resources are important resources for the postgraduate students and that something has to be done to improve access and use of the resources as suggested by the respondents.

4.8 Summary

PERii electronic journal resources have been of significance to the postgraduate students as well as researchers and staff at the University of Dar es Salaam. The key findings show that PERii electronic resources have a lot of uses and advantages to the users. The resources are used for different purposes and are very useful and relevant. It has been revealed that the majority of postgraduate students are aware of the resources and have been accessing and using them. However, there are some challenges hindering access and use of these resources. The challenges have to be handled to improve access and use of PERii electronic journal resources at the University of Dar es Salaam.

CHAPTER FIVE: SUMMARY OF KEY FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the key findings, conclusions and recommendations of the study in accordance with the sub-questions as presented and discussed in chapter four regarding access and use PERii electronic journal resources by postgraduate students in the School of Education at the University of Dar es Salaam.

5.2 Summary of Key Findings

The key findings are summarized in accordance to the research sub-questions of the study.

5.2.1 Awareness of PERii electronic journal resources by postgraduate students

It was revealed that majority of postgraduate students are aware of PERii electronic journal resources available at the University of Dar es Salaam.

5.2.1.1 *The way postgraduate students became aware of PERii electronic journal resources*

The postgraduate students become aware of the existence of PERii electronic journal resources through various means. These include Library website, notice boards, flier, posters, colleagues, Library training (IL training), brochures, guides, through the librarians, and through the supervisors (lecturers).

Reference Librarians have been marketing and promoting PERii electronic journal resources using various methods including advertising the resources on the Library website, preparing and distributing brochures and fliers to the user, using word of mouth to introduce the resources to the users, especially those who visit the Library and others in their departments, providing training particularly Information Literacy training whereby users are introduced to the resources, taught how to access and use them. Also, during the orientation sessions provided in the Library users are introduced to PERii electronic journal resources. For the librarians conducting training sessions, for example, Information Literacy is very important to the users as through the training the users are provided with different skills on how to access PERii electronic journal resources, how to retrieve them, evaluate them, cite them and use them.

5.2.1.2 Training on access and use of PERii electronic journal resources

Despite being aware of PERii electronic journal resources and efforts done by the librarians in providing training to users regarding access and use of PERii electronic journal resources, the majority of respondents have never received any training regarding the use of PERii electronic journal resources. Only a few respondents reported having been trained.

5.2.2   Access of PERii electronic journal resources by postgraduate students

The study has shown that the majority of postgraduate students access PERii electronic journal resources.

5.2.2.1 Method used in searching for PERii electronic journal resources

The leading methods used in searching for PERii electronic journal resources include keyword searching from the electronic journal databases, followed by author searching from the electronic journal databases, then the use of truncation and Boolean operators.

5.2.2.2 Popular tool used in searching for PERii electronic journal resources

The most popular tool used by postgraduate students in searching for PERii electronic journals include search engines which are the leading popular tool, followed by the Library website, then databases with full-text journals.

5.2.2.3 Place where the postgraduate students access PERii electronic journal resources from

Most of postgraduate students prefer accessing PERii electronic journal resources when they are in the Library, in the computer labs and classroom. Few of them prefer accessing PERii electronic journal resources when they are in the hostel or in the Internet café.

5.2.2.4 Reasons for accessing PERii electronic journal resources

The majority of postgraduate students reported that they decided to access PERii electronic journal resources because they are reliable and up to date resources. Other reasons for accessing PERii electronic journal resources include that the resources are easily accessed at anytime anywhere, free availability, they can be downloaded and stored, and articles can be printed.

5.2.2.5 Devices used to access PERii electronic journal resources

The postgraduate students reported using various ICT devices to access PERii electronic journal resources. The majority of postgraduate students use computers in the Library at the University of Dar es Salaam. Moreover, other postgraduate students use their personal laptops; others use computers in the computer labs at the University, and personal smartphones, iPad and Tablets.

5.2.2.6 Reasons for not accessing PERii electronic journal resources

However, some of postgraduate students do not access PERii electronic journal resources because of unreliable internet connectivity, numerous power outage, lack of awareness of PERii resources and some face difficulty in accessing them.

5.2.3   Use of PERii electronic journal resources by postgraduate students

5.2.3.1 Reasons for using PERii electronic journal resources

It has been revealed that most of postgraduate students use PERii electronic journal resources to work on their assignments. Other reasons for using PERii electronic journal resources are whilst working on dissertation/thesis, for literature purposes, for proposal writing, for research report writing, and for current awareness. Very few postgraduate students use PERii electronic journal resources for leisure and for extra exploration of ongoing scientific debates through peer-reviewed papers.

5.2.3.2 Frequency of use of PERii electronic journal resources

Also, the study revealed that the majority of postgraduate students use PERii electronic journal resources weekly. Other postgraduate students use PERii electronic journal resources daily and monthly while, one respondent claimed to use the resources only once per year.

5.2.3.3 Perceived usefulness of PERii electronic journal resources

Regarding usefulness of PERii electronic journal resources, the majority of postgraduate students rated the resources to be 'useful', followed by those who rated the resources to be 'very useful' and 'somewhat useful' respectively. None of the postgraduate students claimed that the resources are not useful.

5.2.3.4 Perceived relevance of PERii electronic journal resources

Regarding the issue of relevance of the resources, the majority of the postgraduate students rated PERii electronic journal resources to be 'relevant'. This was followed by the postgraduate students who rated the resource to be 'very relevant' and 'somewhat relevant' respectively. Again, none of the postgraduate student rated the resource to be not relevant.

5.2.3.5 Reasons for not using PERii electronic journal resources

Some postgraduate students do not use PERii electronic journal resources because they do not know how to access them; they prefer using printed resources; others face difficulty in accessing the journal resources.

5.2.4 Challenges encountered in access and use of PERii electronic journal resources by postgraduate students.

The postgraduate students have been facing a lot of challenges when accessing and using PERii electronic journal resources. The challenges were reported to include power outage, inadequate bandwidth, limited access to computers, slow download speed, inability to access the resources from home, lack of awareness and difficulty in making a search.

5.2.5 Opinions to improve access and use of PERii electronic journal resources

The respondents had various opinions on what should be done to improve access and use of PERii electronic journal resources. The opinions are summarized in five categories which are improved training; improve ICT infrastructure and power; improve technology to support access and use of PERii electronic journal resources; availability of PERii electronic resources and relevance; and improve awareness of PERii electronic journal resources.

5.2.5.1 Improve Training

- The postgraduate students argued that training on how to access and use PERii electronic resources should be improved.

5.2.5.2 Improve ICT infrastructure and power

- The respondents argued that ICT infrastructure, for example computers, should be improved to support access and use of PERii electronic journal resources.
- Ensure stable and reliable power to support access and use of PERii electronic journal resources.

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5.2.5.3 Availability of PERii electronic journal resources and relevance

- Improve availability of PERii electronic journal resources
- Ensure relevant information is provided
- Access to PERii should also be available outside the University through provision of passwords so that only those who are *bona fide* students and researchers can access them from home

5.2.5.4 Improve technology to support access and use of PERii electronic journal resources

- Increase download speed of PERii electronic journal articles
- Ensure adequate bandwidth to support access and use of PERii electronic journal resources

5.2.5.5 Improve awareness of PERii electronic journal resources

- PERii electronic journal resources should be advertised on the University notice board
- Awareness of PERii should be increased among students and researchers
- It must be a national priority that every institution should subscribe to PERii resources
- There should be well established centres to boost awareness of PERii resources country wide

5.3 Conclusion

In the light of the findings, it can be concluded that PERii electronic journal resources are very important and useful resources which support learning and research of the postgraduate students at the University of Dar es Salaam, as the majority of postgraduate students have reported that the resources are very useful and they are accessing and using them. The resources has been useful to the postgraduate students from the time when they are doing their coursework studies up to when they are doing their research to complete their degree programmes.

PERii electronic resources are of significance because they are up to date resources which can be accessed anytime, anywhere within the University compound; they are freely available, they can be downloaded and stored; and they can be printed to have a hard copy.

Generally, PERii electronic journal resources are very important, very useful, and relevant resources to be used for academic purposes as they supplement other printed resources available in the University Library as well as the entire University.

5.4 Recommendations

Based on key findings regarding access and use of PERii electronic journal resources; the following are the key recommendations on what should be done to improve access and use of the resources.

5.4.1 Training (Information Literacy training) should be integrated into the University curriculum

Information literacy training should be integrated in the University curriculum and should be made a compulsory course for all students in all disciplines. Students should be taught on how to access the resources, how to retrieve, evaluate, cite and use PERii electronic resources. The training will also equip the students with searching skills.

More training regarding access and use of PERii electronic resources (for example, Information Literacy training) should be provided regularly to postgraduate students and other users such as researchers and staff so as to equip the users on how to access and use them.

5.4.2 Increase ICT infrastructure to support access and use PERii electronic journal resources

The University should seek for more funds to improve and develop ICT infrastructure for both the Library and computer labs to help the students to access and use PERii electronic resources. The fund also should be used to purchase other portable ICT devices in the Library such as iPad and laptops for example, and provide the opportunity to students and other Library users to borrow them at a given specific time when they want to access and use electronic resources.

5.4.3 Ensure stable and reliable power

The University should ensure there is stable and reliable power by buying heavy duty standby generators to overcome the problem of frequent shortage of power which hinder access and use of PERii electronic journal resources. There should be also a fund to make sure that the

generators are working whenever required. Also, the government should work hard to solve the problem of power outage.

5.4.4 Increase awareness of PERii electronic journal resources

Various methods for promotion and marketing of PERii electronic journal resources should be improved in order to increase awareness of the resources. More efforts are needed to make sure that all the University community are aware of the resources and are using them.

5.4.5 Support access of PERii electronic journal resources outside the University campus

PERii electronic resources should be capable of being accessed also outside the University. The Library should make the provision of passwords to *bona fide* users possible in order to allow PERii to be accessed from home.

5.4.6 Ensure adequate bandwidth

The University should ensure there is adequate bandwidth in order to allow access of electronic resources more efficient. The University should make better use of the available bandwidth by shaping it so that certain services such as the ICT service offered by the Library receive a large proportion of bandwidth than other services. This can even be adjusted to be time-dependent in order that greater bandwidth is available in the Library during the hour of peak usage.

5.4.7 Ensure relevant information is provided

More PERii electronic databases with relevant information to all courses pursued at the University of Dar es Salaam should be added and subscribed in order to solve the problems for those who fail to get resources related or relevant with their studies.

5.4.8 Further research recommended

The research should be conducted to investigate the impact and effectiveness of the present methods of marketing and promotion of PERii electronic journal resources as well as the training provided; together with an investigation of what improved methods might be used to improve access and use of PERii electronic journal resources.

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APPENDICES

Appendix 1: Informed consent form

INFORMED CONSENT FORM

Dear Respondent,

My name is Anajoyce Samuel Katabalwa, a Masters of Information Technology (MIT) student at the University of Pretoria, South Africa. I am conducting a research study titled: ***Assessing access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of postgraduate students in the School of Education***. The findings of this study will be used for academic purposes and all the information that you will provide will be kept confidential and will not be linked to your name.

Participation in this study is voluntarily, you may decide to withdraw from participation at any time during this process. If you have any questions about this study, or would like additional information to help you in reaching a decision about participation, please feel free to contact me. I would appreciate your participation in this study.

You will be asked to participate by responding to questions in the questionnaire/interview guide after your consent. The information you will provide will be kept confidential, names and identifiable information will not be revealed, and all recorded information will not be shared with anyone except for an authorized person(s) in this study. The information you will provide will be used for mini-dissertation writing.

Contact: Anajoyce Samuel Katabalwa,

E-mail: joykatabalwa@gmail.com,

Mob: +255 713 499578.

Consent

1. I hereby voluntarily grant my permission for participation in the project as explained to me by **Anajoyce Samuel Katabalwa**
2. I confirm that the nature and objective of the study have been explained to me and I understand them.
3. I understand my right to choose whether to participate in the study and that the information furnished will be handled confidentially.
4. I understand that at anytime I may decide to withdraw from this study.
5. I agree to participate in this study.

Respondent's signature: _____   Date: _____

Researcher: **Anajoyce Samuel Katabalwa**   Date: _____

Thank you!

Appendix 2: Application form

<table>
<tr><td colspan="2" align="center">UNIVERSITY OF PRETORIA
FACULTY OF ENGINEERING, BUILT ENVIRONMENT

AND INFORMATION TECHNOLOGY

FACULTY COMMITTEE FOR RESEARCH ETHICS AND INTEGRITY</td></tr>
<tr><td colspan="2" align="center">APPLICATION FOR APPROVAL OF A RESEARCH PROJECT</td></tr>
<tr><td colspan="2">This application form must be read with the Regulations for Research Ethics and Integrity and completed. Important: Each item must be completed.</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>Date of submission</td><td>21st August, 2014</td></tr>
<tr><td colspan="2">1. DETAILS OF APPLICANT</td></tr>
<tr><td>1.1 Applicant's surname</td><td>Katabalwa</td></tr>
<tr><td>1.2 Applicant's initials</td><td>A. S.</td></tr>
<tr><td>1.3 Applicant's title (prof, dr, mr, ms, other)</td><td>Ms.</td></tr>
<tr><td>1.4 Postal address (where approval is to be sent)</td><td>P.O. Box 35092, Dar es Salaam, Tanzania.</td></tr>
<tr><td>1.5 E-mail address</td><td>joykatabalwa@gmail.com</td></tr>
<tr><td>1.6 Telephone</td><td>+255 713 499578</td></tr>
<tr><td>1.7 School in Faculty (Engineering, Built Environment or Information Technology)</td><td>School of Information Technology</td></tr>
<tr><td>1.8 Department</td><td>Information Science</td></tr>
<tr><td>1.9 Study leader/promotor (if the applicant is a student) name, address, e-mail address</td><td>Peter G. Underwood pgunderwood@wol.co.za
4 Brentwood Close   +27 (0)21 761 8463 (landline and fax)
11C Indian Road +27 (0)84 650 3091 (cell)
Kenilworth

CAPE TOWN   pgunderwood (Skype)
7708
South Africa</td></tr>
<tr><td>1.10 Names, addresses, e-mail addresses and capacity of co-researchers/ students/ lecturers involved with the project</td><td>Anajoyce Samuel Katabalwa

P.O. Box 35092, Dar es Salaam

joykatabalwa@gmail.com</td></tr>
<tr><td colspan="2">2. RESEARCH PROJECT DETAILS</td></tr>
<tr><td>2.1 Title of research project</td><td>Assessing the access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of the</td></tr>
</table>

postgraduate students in the School of Education.

2.2 Furnish as brief outline the following so that the relevant ethical aspects can be identified clearly:

- Statement of the problem
- Statement of objectives
- Experimental methods/ measuring instruments
- Materials/Apparatus
- Profile of research subjects/target group/animals/environmental factors

Research Question: Do the postgraduate students in the School of Education access to and use PERii electronic journal resources at the University of Dar es Salaam?

Sub-questions:

vi.   Are the postgraduate students in the School of Education aware of PERii electronic journal resources?
vii. How do postgraduate students access PERii electronic journal resources at the University of Dar es Salaam?
viii. What are the uses of PERii electronic journal resources by the postgraduate students at the University of Dar es Salaam?
ix.   What are the constraints faced by postgraduate students in the access and use of PERii electronic journal resources at the University of Dar es Salaam?
x.   What should be done to improve the access and use of PERii electronic journal resources at the University of Dar es Salaam?

Research instruments:

i.   Questionnaires (with postgraduate students in the School of Education – department of Education Psychology and Curriculum Studies and department of Educational Foundations, Management and Lifelong Learning); and
ii. Interview guide (with six Reference Librarians in the University of Dar es Salaam Library.

2.3 Is a research questionnaire/ survey/interview used? (Yes or No)	Yes
2.4 If yes, have you submitted this with your application? (Yes, No or Not Applicable)	Yes

3. RESEARCH SUBJECTS

If the project involves people, either individually or in groups, complete this section

3.1 Does the study involve people as informants, or does it involve people as research subjects? (Tick one)	Informants	√	Research subjects	

3.2 Describe possible safety and health implications that participation in project may pose

N/A

3.3 Expected duration of participation of subjects in the project	45 minutes

3.4 Describe the manner in which confidential information will be handled and confidentiality

assured	

Names and identifying information of respondents will not be recorded; filled questionnaires and recorded information from the interviews will not be shared with anyone except for the authorized person(s) in this study; After the specified period by the research committee, filled questionnaires and recorded information will be destroyed.

3.5 Remuneration offered to subjects for participation	N/A

If the project involves animals, complete this section

3.6 Describe possible safety and health implications participation in the project may hold	
N/A	

3.7 Expected duration of participation by animals in the project	N/A
3.8 Care/housing/feeding of the animals during the project	N/A

4. ENVIRONMENTAL IMPACT

If the project may have a potentially detrimental environmental impact, complete the following

4.1 Potential impact on the environment	N/A
4.2 Expected duration of the impact	N/A
4.3 Locality of the project	N/A
4.4 Preventive measures	N/A

5. DISSEMINATION OF DATA

Method of publishing/application of the results	Mini-dissertation

6. SUBMISSION CHECKLIST

6.1 Have you submitted the Declaration by the Researcher? (See the website for this form)	Yes
6.2 Have you submitted an example of the informed consent form to be completed by each participant? (See the website for an example)	Yes

Appendix 3: Questionnaire for postgraduate students

QUESTIONNAIRE FOR POSTGRADUTE STUDENTS

Dear Respondent,

My name is Anajoyce Samuel Katabalwa, a Masters of Information Technology (MIT) student at the University of Pretoria, South Africa. I am conducting a research study titled: *Assessing access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of postgraduate students in the School of Education*. The findings of this study will be used for academic purposes and all the information that you will provide will be kept confidential and will not be linked to your name.

Participation in this study is voluntarily, you may decide to withdraw from participation at any time during this process. If you have any questions about this study, or would like additional information to help you in reaching a decision about participation, please feel free to contact me. I would appreciate your participation in this study.

You will be asked to participate by responding to questions in the questionnaire/interview guide after your consent. The information you will provide will be kept confidential, names and identifiable information will not be revealed, and all recorded information will not be shared with anyone except for an authorized person(s) in this study. The information you will provide will be used for mini-dissertation writing.

Contact: Anajoyce Samuel Katabalwa,

E-mail: joykatabalwa@gmail.com,

Mob: +255 713 499578.

Consent

1. I hereby voluntarily grant my permission for participation in the project as explained to me by **Anajoyce Samuel Katabalwa**
2. I confirm that the nature and objective of the study have been explained to me and I understand them.
3. I understand my right to choose whether to participate in the study and that the information furnished will be handled confidentially.
4. I understand that at anytime I may decide to withdraw from this study.
5. I agree to participate in this study.

Respondent's signature: _____   Date: _____

Researcher: **Anajoyce Samuel Katabalwa**   Date: _____

Thank you!

Dear respondent,

It will be appreciated if you can spare some time to complete the enclosed questionnaire and return it to the researcher (Ms. Anajoyce Samuel Katabalwa) in the University of Dar es Salaam Library.

A. **Demographic Information** (Please, tick the appropriate response)

1. Which programme are you doing? (Please, tick the appropriate response)
   - Masters   (..........)
   - PhD   (..........)

2. Which department in the School of Education do you belong?
   - ………………………………………………………………………….

B. **Awareness of PERii electronic journal resources**

3. Are you aware of PERii electronic journal resources? (Please, tick the appropriate response)
   - Yes   (..........)
   - No   (..........)

   If your answer is 'NO' above, please leave the remainder and return the questionnaire to the researcher

4. If 'yes' how did you become aware of PERii electronic journal resources? (Please, tick all applicable responses)
   - Through the Library websites   (..........)
   - Through the Notice board   (..........)
   - Through fliers   (..........)
   - Through posters   (..........)
   - Through colleagues   (..........)
   - Through Library training (Information Literacy Training)   (..........)
   - Through Library brochure   (..........)
   - Through Library guide   (..........)
   - Through the librarian   (..........)
   - Through the supervisors (lecturers)   (..........)
   - Others please specify…………………………………………………………...............
     …………………………………………………………………………………………

5. Have you ever attended any training on how to access and use of PERii electronic resources? (Please, tick the appropriate response)
   - Yes   (..........)
   - No   (..........)

     If 'yes' please name it
     ………………………………………………………………………………………
     ………………………………………………………………………………………

C. Access of PERii electronic journal resources

6. Do you have access to PERii electronic journal resources? (Please, tick the appropriate response)
   - Yes   (..........)
   - No (if No please go to question No. 13)   (..........)

7. If 'yes' what method of searching do you use? (Please, tick all applicable responses)
   - Keyword searching of electronic journal databases   (..........)
   - Author searching from the electronic journal databases   (..........)
   - Truncation   (..........)
   - Boolean operators   (..........)
   - Others, please specify……………………………………………………………........................
     ....

8. What popular tool do you use to access PERii electronic journal resources?
   - Search engines   (..........)
   - Database with full-text journals   (..........)
   - Library website   (..........)

9. Where do you access to PERii electronic journal resources? (Please, tick all applicable responses)
   - In the Library   (..........)
   - In computer lab   (..........)
   - In Hostel   (..........)
   - In the class room   (..........)
   - In the Internet Café   (..........)
   - Others, please specify……………………………………………………………….

10. Reasons for accessing PERii electronic journal resources (Please, tick all applicable responses)
    - They are reliable and up to date resources   (..........)
    - They are easily accessed at anytime, anywhere   (..........)
    - Free availability   (..........)
    - They can be downloaded and stored   (..........)
    - They can be printed   (..........)
    - Others, please specify…………………………………………………………….

11. What do you use to access PERii electronic journal resources?
    - Computers in the Library   (..........)
    - Computers in Computer lab   (..........)
    - Personal laptop   (..........)
    - Personal smartphone   (..........)
    - Personal iPad   (..........)
    - Personal Tablet   (..........)
    - Others, please specify…………………………………………………………….

12. If 'No' on question eight above, why don't you access PERii electronic journal resources?

- Please explain…………………………………………………………………………...
  …………………………………………………………………………………………
  …………………………………………………………………………………………
  …………………………………………………………………………………………
  …………………………………………………………………………………………
  ……………………...………………………………………………………………...

D. Use of PERii electronic journal resources

13. For which purpose do you use PERii electronic journal resources? (Please, tick all applicable response)

- Working on the assignments (..........)
- For working on dissertation/thesis (..........)
- For literature purpose (..........)
- For research proposal writing (..........)
- For research report writing (..........)
- Current awareness (..........)
- For leisure (..........)
- Others, please specify………………………………………………………............
  …………………………………………………………………………………………

14. How often do you use PERii electronic journal resources? (Please, tick the appropriate response)

- Daily (..........)
- Weekly (..........)
- Monthly (..........)
- Yearly (..........)

15. In your opinion, how do you rank usefulness of PERii electronic journal resources? (Please, tick the appropriate response)

- Very useful (..........)
- Useful (..........)
- Somewhat useful (..........)
- Not useful (..........)

16. How do you evaluate the relevance of articles in the journals you have accessed? (Please, tick the appropriate response)

- Most relevant (..........)
- Relevant (..........)
- Somewhat relevant (..........)
- Irrelevant (..........)

17. If you don't use PERii electronic journal resources, why?

- I prefer using printed resources than electronic resources (..........)

- I don't know how to access them (..........)
- I always face difficulty in accessing them (..........)
- I don't know how to use a computer to access them (..........)
- Others, please specify……………………………………………………………………...............
……………………………………………………………………….........

E. Challenges in accessing to and using PERii electronic journal resources

18. What are the challenges you are facing in accessing to and using of PERii electronic resources? (Please, tick all applicable responses)
    - Power outage (..........)
    - Inadequate bandwidth (..........)
    - Limited access to computers (..........)
    - Slow download speed (..........)
    - Inability to access electronic journals from home (..........)
    - Difficulty to find relevant information (..........)
    - Lack of awareness (..........)
    - I find making a search difficult (..........)
    - Others, please specify…………………………………………………………….....................
....

F. Suggestions on how to improve access to, and use of, PERii electronic journal resources

19. In your opinion, what should be done to improve access and use of PERii electronic journal resources at the University of Dar es Salaam?
    ………………………………………………………………………………………………
    ………………………………………………………………………………………………
    ………………………………………………………………………………………………
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Appendix 4: Interview guide for the Reference Librarian

Dear Respondent,

My name is Anajoyce Samuel Katabalwa, a Masters of Information Technology (MIT) student at the University of Pretoria, South Africa. I am conducting a research study titled: ***Assessing access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of postgraduate students in the School of Education***. The findings of this study will be used for academic purposes and all the information that you will provide will be kept confidential and will not be linked to your name.

Participation in this study is voluntarily, you may decide to withdraw from participation at any time during this process. If you have any questions about this study, or would like additional information to help you in reaching a decision about participation, please feel free to contact me. I would appreciate your participation in this study.

You will be asked to participate by responding to questions in the questionnaire/interview guide after your consent. The information you will provide will be kept confidential, names and identifiable information will not be revealed, and all recorded information will not be shared with anyone except for an authorized person(s) in this study. The information you will provide will be used for mini-dissertation writing.

Contact: Anajoyce Samuel Katabalwa,

E-mail: joykatabalwa@gmail.com,

Mob: +255 713 499578.

Consent

1. I hereby voluntarily grant my permission for participation in the project as explained to me by **Anajoyce Samuel Katabalwa**
2. I confirm that the nature and objective of the study have been explained to me and I understand them.
3. I understand my right to choose whether to participate in the study and that the information furnished will be handled confidentially.
4. I understand that at anytime I may decide to withdraw from this study.
5. I agree to participate in this study.

Respondent's signature: _____   Date: _____

Researcher: **Anajoyce Samuel Katabalwa**   Date: _____

Thank you!

INTERVIEW GUIDE FOR REFERENCE LIBRARIAN

1. Do you think library users are aware of PERii electronic journal resources at the University of Dar es Salaam?

2. Which methods do you use to bring awareness to library users about the availability of PERii electronic journal resources at the University of Dar es Salaam?
3. How do you promote PERii electronic journal resources at the University of Dar es Salaam?
4. Which approaches do you use to promote access to PERii electronic journal resources at the University of Dar es Salaam?
5. Do you provide any training to library users regarding the access to PERii electronic journal resources?
6. Do you think training on how to access and make use of PERii electronic journal resources is important to library users?
7. In your opinion, what are the perceived uses of PERii electronic journal resources?
8. What do you consider are the challenges in providing the services of PERii electronic journal resources?
9. What efforts have you done to overcome the challenges you mentioned?
10. In your opinion, what do you think should be done to improve access to, and use of, PERii electronic journal resources at the University of Dar es Salaam?
11. Any other comment?

Thanks for your participation.

Appendix 5: Research application letter

<div align="right">

Anajoyce S. Katabalwa,

University Library,

P.O. Box 35092,

Dar es Salaam,

Tanzania.

22nd September, 2014.

</div>

The Deputy Vice Chancellor (Research and Publication),

University of Dar es Salaam,

P.O. Box 35091,

Dar es Salaam.

Dear Sir/Madam,

Re: **PERMISSION TO COLLECT DATA AT THE UNIVERSITY OF DAR ES SALAAM TO COMPLETE THE MINI-DISSERTATION**

Kindly refer the heading above.

I am requesting for your permission to collect data in the School of Education, at the University of Dar es Salaam in order to complete and submit the mini-dissertation for the examination. The mini-dissertation is required to complete the Masters of Information Technology (MIT) studies pursued at the University of Pretoria. The Dissertation title is: **Assessing the access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of the postgraduate students in the School of Education.**

Kindly find attached a letter for Ethical clearance for your reference.

Thanking you.

Anajoyce Samuel Katabalwa

Appendix 5: Research clearance form from University of Pretoria

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Enquiries	:	Dr Marlene Holmner	Faculty of Engineering, Built
Tel. nr.	:	+27 (0)12 420-5215	Environment and Information
Fax nr.	:	+27 (0)12 362-5181	Technology
E-mail	:	Marlene.holmner@up.ac.za	
Office	:	IT 6-43	School of Information Technology

2014-09-16

ETHICAL CLEARANCE FOR ANAJOYCE KATABALWA

Dissertation Title: Assessing the access and use of PERii electronic journal resources at the University of Dar es Salaam: The case of the postgraduate students in the School of Education.
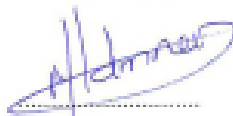
To whom it may concern:

This is to confirm that the Research Committee of the Department of Information Science approved the application by Anajoyce Katabalwa for ethical clearance. Ms Katabalwa complied with the standard requirements for ethical clearance as set out by the University of Pretoria's Faculty of Engineering, Built Environment and Information Technology (EBIT), as follows:

- She signed and submitted all the application forms required for ethical clearance;
- She submitted her data collection instruments for vetting by both the Research and Ethics Committees; and
- She implemented all corrections recommended by the above-mentioned committees.

The Research Committee of the Department of Information Science therefore requests permission for Ms Katabalwa to collect the data she needs in order to complete and submit her mini-dissertation for examination. The Committee further appreciates any effort by appropriate authorities to expedite this process, and expresses its gratitude in anticipation.

Yours sincerely

Dr Marlene Holmner

Dr Marlene Holmner
Academic Coordinator: Carnegie MIT
Department of Information Science
E-mail: marlene.holmner@up.ac.za

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UNIVERSITY OF DAR-ES-SALAAM
OFFICE OF THE VICE-CHANCELLOR
P.O. BOX 35091 ♦ DAR ES SALAAM ♦ TANZANIA

Ref. No: AB3/12(B)
Date: 13th October, 2014

To: The Deputy Vice Chancellor - Administration,
        University of Dar es Salaam.

UNIVERSITY STAFF AND STUDENTS RESEARCH CLEARANCE

The purpose of this letter is to introduce to you **Ms Anajoyce Samuel Katabalwa** who is a bonafide staff of the University of Dar es Salaam and who is at the moment conducting research. Our staff members and students undertake research activities every year especially during the long vacation.

In accordance with a government circular letter Ref. No. MPEC/R/10/1 dated 4th July, 1980 the Vice-Chancellor was empowered to issue research clearances to the staff and students of the University of Dar es Salaam on behalf of the government and the Tanzania Commission for Science and Technology, a successor organization to UTAFITI.

I therefore request you to grant the above-mentioned member of our University community any help that may enable her to achieve her research objectives. What is required is your permission for her to see and talk to the leaders and members of your institution in connection with her research.

The title of the research in question is **An Assessment of Access and Use of PERii Electronic Journal Resources at the University of Dar es Salaam: A Case Study of Postgraduate Students in the School of Education".**

The period for which this permission has been granted is from **October** to **December, 2014** and will cover the following area: **School of Education.**

Should the areas to which alternative places could be visited. In case you may require further information, please contact the Directorate of Research, Tel. 2410500-8 Ext. 2084 or 2410727.

VICE CHANCELLOR
UNIVERSITY OF DAR-ES-SALAAM
P.O. BOX 35091
DAR-ES-SALAAM

Prof. Rwekaza S. Mukandala
VICE-CHANCELLOR

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